CHNOLOGY DEPARTMENT

TEXTILE WORLD

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NEW RIVEREDGE SCREEN-PRINTING PLANT . . . Story on page 106

DIP—Not Drop—Seen for Textiles

PAGE 101

COMMERCIAL FACTORS CORPORATION

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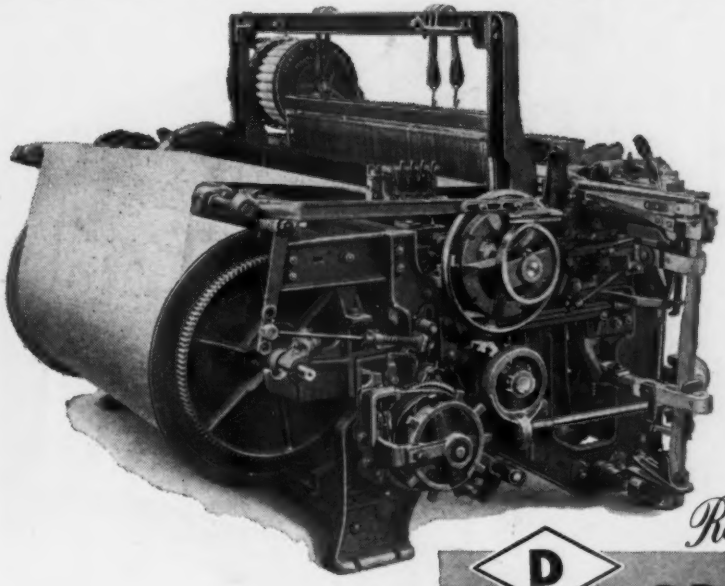

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THE *Long-Range* VIEW

Industrial Fabrics

Contemplation of industrial fabrics does not lead to visions of their enhancing the charms of a Hollywood starlet or adding glamour to a "house of tomorrow." Nevertheless, many practical mill men realize the possibilities of industrial fabrics for keeping their mills running steadily and as a source of consistant profits, although seldom any killings.

On the other side of the fence, the users of industrial fabrics make a charge against the textile industry, a charge that is, in part at least, justified. These users claim that textile mills are not willing to learn the needs and terminology of the users. Too often, some say, when a fabric is needed for industrial uses the prospective buyer is told to look around to see what staple fabrics (or war-surplus fabrics) he can use. Often the potential user does not know the meaning of the common textile terms, such as picks and ends or sley. The potential user merely knows that he needs a fabric to give certain characteristics to his product. He doesn't know, often, whether he needs cotton, wool, rayon, nylon, Fiberglas—or what construction or finish. For example, in a recent display of laminated household wares, the laminators had no idea what fabrics they had used. They didn't realize that most of their line was made from surplus cargo-chute-canopy fabrics that in normal times would be unobtainable except on special order (if they knew what to order).

A complaint some laminators make is that the sizing used on the gray fabrics they buy must be removed before the cloth can be used. They have both a loss of a percentage of the material and an out-of-pocket cost to pay for having the sizing removed.

Such users are ripe for anyone who is willing to work with them to understand their problems and terminology, and then to give them what they want and thus open up avenues of business that otherwise may remain closed or become the domain of competitors within or without the textile field.

It is possible for mills to use sizes that do not have to be removed by the laminators. One outstanding group of mills already knows how to do this, and another uses a material in binding bonded-fiber webs which is compatible with the plastic sheets to be used in laminations.

To cite a different example of the use of industrial fabrics, what about the potentialities in fabrics for private aircraft? What is being done by mills to develop—even preserve—this market? The aluminum interests are certainly doing a good job in having fabric replaced by aluminum. Is any textile mill going out of its way to get this business to the extent of showing that it is possible for a fabric cover to last for virtually the life of the average private plane—to the extent of pointing out how much more easily fabric covers can be repaired? Here is a potential market that is definitely slipping away.

Some mill men have claimed no interest in industrial fabrics because users so often are big concerns which can dominate the mills or produce their own fabrics. Tire-cord mills are cited as an example. It is well to look into such excuses to see if they are not just the result of lethargy. A more valid excuse is that it is too easy for a competitor to show superiority since for most industrial uses the performance of a fabric can be exactly measured. The only solution here is to be the best and to give good service.

During the war, industrial users of fabrics (except the military) were squeezed in order that a larger proportion of textiles might be made available to the general public in the form of clothing and house furnishings. Now that supplies of clothing and house furnishings are beginning to catch up with demand, established industrial needs can be satisfied and new uses developed. The potentials here are virtually equal to those in either clothing or house furnishings. We should go more than half way to meet these users. A good start is to make a sincere effort to learn just what the users need as stated in their own terminology.

C. H. Bendigo

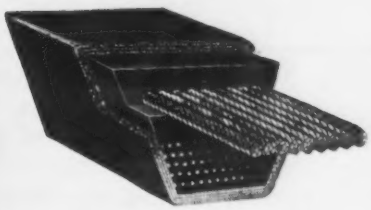
GTM-Specified

GOODYEAR INDUSTRIAL RUBBER PRODUCTS

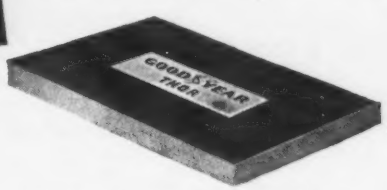
THE BIG 3 FOR BIG SAVINGS

YOU'LL SET NEW PERFORMANCE STANDARDS WITH THESE OLD RELIABLES

TEXAIR HOSE — most economical ever built for cleaning spindles and carding machines. Light, supple, unusually strong cover won't soften or weaken from contact with oil, but is tough and resists cutting and abrasion, insuring longer life.



E-C CORD MULTI-V BELTS are uniform in length, cross section, pull and service life. Their perfect teamwork insures lowest ultimate cost.



THOR BELTS are square-edged, top-quality, close-woven, silver duck belts designed for high-speed drives where there is severe flexing over small pulleys — and for heavy drives requiring shock load resistance and the ability to hold fasteners.

HERE are three standout performers that have proved their worth in countless installations. They exemplify the economy, the long life, the tried-and-true dependability you get from all Goodyear Industrial Rubber Products.

Whatever your rubber problem, you'll find the answer in a Goodyear product, specified in the size and construction best suited to your needs by the G.T.M.—Goodyear Technical Man. For on-the-spot advice by this friendly counselor, write: Goodyear, Akron 16, Ohio or Los Angeles 54, California.

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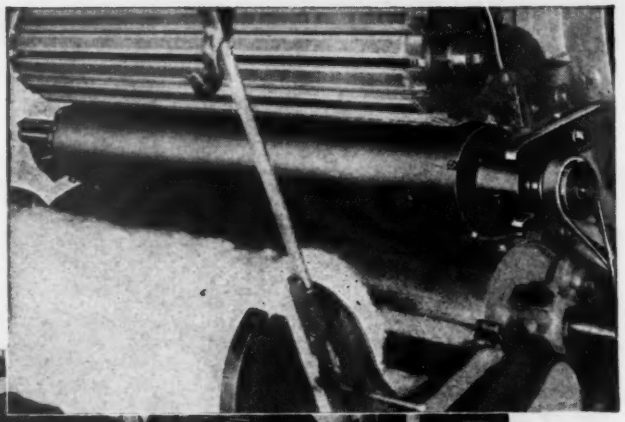
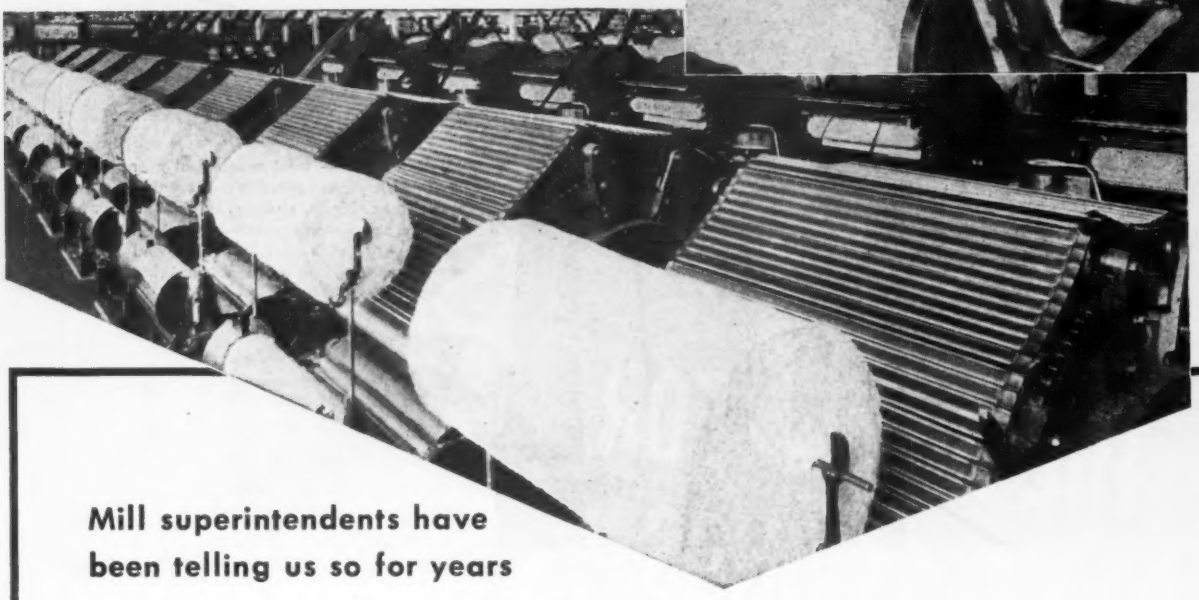
CONTINUOUS STRIPPERS

are saving time, increasing production and improving quality in American mills





Mill superintendents have been telling us so for years

Here are a few excerpts from their letters:

1930 *". . . the cards will run almost indefinitely without stripping . . . we expect to send you an additional order."**

1936 *". . . we feel you are conservative in your claims."**

1940 *". . . we are very well pleased with the performance of this equipment . . . we have found definite savings as well as more uniform work."**

1943 *". . . they have paid for themselves many times over . . . we could not get along without them."**

1946 *". . . Mr. ——* is high in his praise of our Continuous Strippers. Says they are doing a wonderful job, and he really has good-running work to prove it. Very seldom see an end down on spinning, even though he is running some irrigated cotton which several of the other mills in this group say they cannot run."*

1947 *". . . Mr. ——* told me that since installing these strippers the yarn breaking strength had gone up and the looms were running at a higher efficiency."*

*Name on request.

The efficient Saco-Lowell Continuous Card Stripper offers your mill these proved advantages: saving of cotton — increased production — improvement in quality of yarn — cleaner card room — saving in labor costs — reduction in power consumption. It is easily and quickly installed on all Saco-Lowell Cards — and on many other makes as well. Write the nearest office for our Bulletin giving complete details.

Saco-Lowell Shops · **BOSTON**

Shops at Biddeford, Maine

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Quick Trick

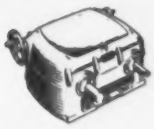
Just tighten three cap screws to lock this sheave to the shaft! No filing, reaming or hammering . . . no wobble.

TEXROPE .. Greatest Name in V-Belt Drives

"Super 7" V-BELTS
Five Types — Sizes to suit every power transmission job.

Texsteel, Texdrive, "Magic-Grip"
— sheaves in a full range of sizes, grooves.

"Vari-Pitch" SHEAVES
Exact variations in speed, stationery or motion control.



SPEED CHANGERS
Speed variations up to 375% at the turn of a crank.

ENGINEERING
Finest V-Belt engineering talent in the world—at your call.

TEXROPE "Super 7" V-Belts result from the cooperative research of two great companies — Allis-Chalmers and B. F. Goodrich. They are sold only by A-C.

Save time . . . prevent damage to motor and shaft . . . with TEXROPE

"MAGIC-GRIP" SHEAVES

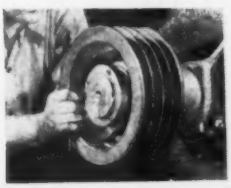
QUICKLY ALIGNED

Because it slides freely on the shaft, it's easy to line up the sheave accurately — for good alignment, smooth operating, longer belt life. It pays to standardize on "Magic-Grip" sheaves.

See Sweet's Catalog

SLIPS ON EASILY

Comes completely assembled. Tapered split bushing provides clearance for even over-size shafts — it's compressed and locked to the shaft with an all-around clamp grip by tightening three cap screws. Can be removed as easily as it goes on.



HERE'S A SHEAVE that goes on *fast*. Less labor cost — less downtime. But that's only part of the saving. There's no forcing or hammering to damage motor bearings — no set screws to mar the shaft. Locks on with a powerful clamp grip that prevents backlash or wobble. And . . . it costs no more than a standard heavy duty sheave of comparable materials and precision workmanship.

Texrope "Magic-Grip" sheaves are made in diameters from 5.4 to 48 inches, two to 12 grooves. They're engineered by Allis-Chalmers, originators of the multiple V-belt drive. For specifications, prices, call your nearest A-C dealer or office. ALLIS-CHALMERS, MILWAUKEE 1, WISCONSIN. A 2221

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One of the Big 3 in Electric Power Equipment — Biggest of All in Range of Industrial Products

1847 1947
A CENTURY OF SERVICE to Industry THAT MADE America Great

CLEAN OILY WOOD FLOORS WITH GREATER SPEED . . . SAFELY!

Speed in cleaning floors is especially important in mills because of the oil hazard. Frequent cleaning on a regular schedule is essential to worker safety. BUT frequent cleaning calls for care in selecting the method. Should it be wet scrubbing, dry scrubbing, or dry cleaning? *Finnell*, manufacturers of floor-maintenance equipment for more than four decades, recommends wet scrubbing for cleaning oily wood floors. Here's why:

1. Wet scrubbing permits the use of a fast-acting mineral oil solvent, the most effective agent for emulsifying grimy oil and grease for speedy removal with mechanical equipment.

2. Wet scrubbing with a fast-acting mineral oil solvent, such as *Setol*, is *thoroughly safe* — won't injure floors regardless of frequency of cleaning. Obviously, too frequent sanding or grinding down the floor surface is costly in several ways.

The *Finnell* illustrated, a *Self-Propelled Scrubber-Vacuum*, is a complete cleaning unit *all in one.* It applies the cleaning solution, scrubs, rinses if required, and picks up. Has a cleaning capacity up to 8,750 sq. ft. per hour!

Finnell makes equipment for dry scrubbing as well as wet scrubbing, and for dry cleaning, waxing, and polishing. Also a full line of *Cleansers*, *Sealers*, and *Waxes*, as well as *Mop Trucks* and other accessory equipment.

For consultation, free floor survey, or literature, phone or write nearest *Finnell* branch or Finnell System, Inc., 1905 East Street, Elkhart, Indiana.

FINNELL SYSTEM, INC.

Pioneers and Specialists in

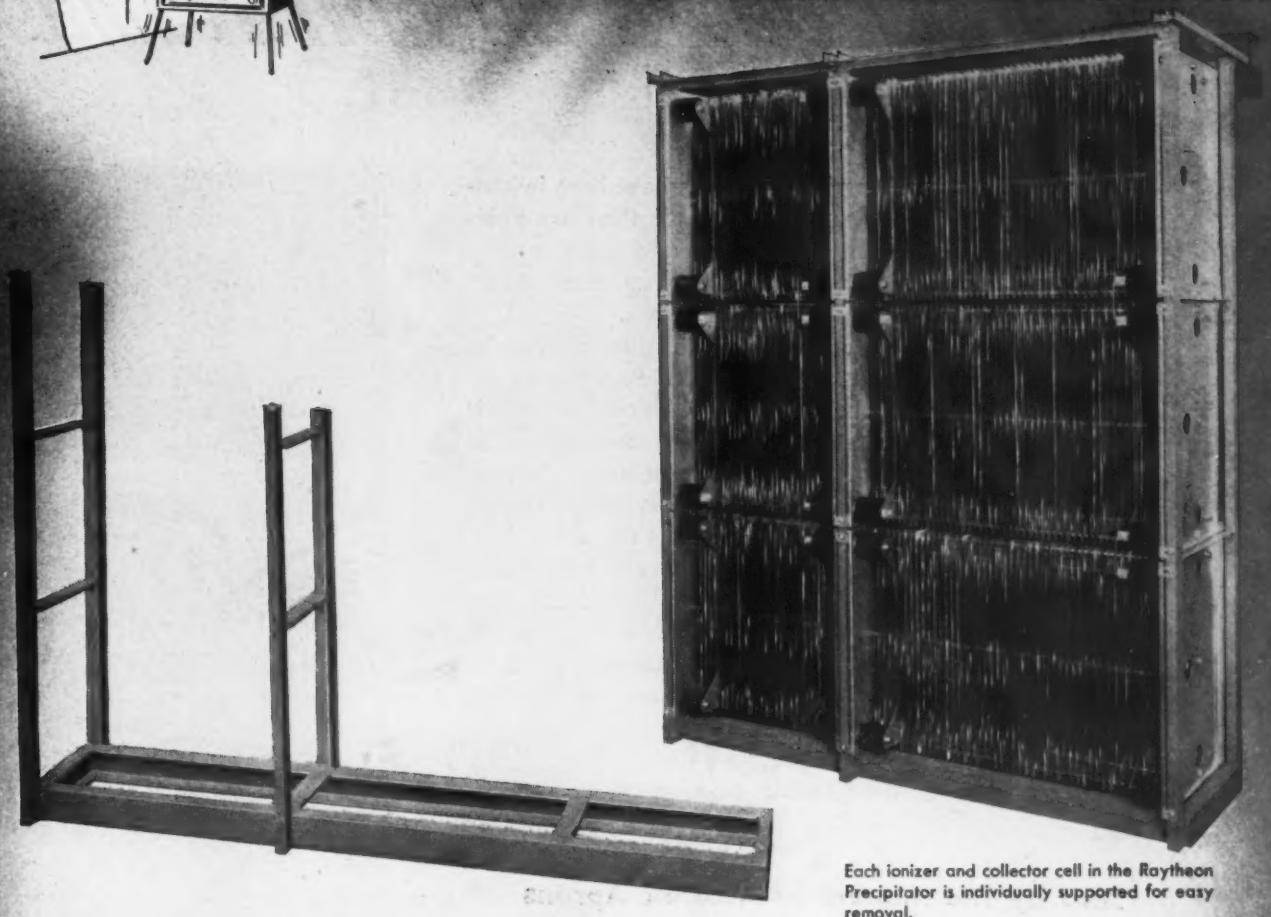
FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

NOTES ON *Electronic Air Cleaning* EQUIPMENT . . . No. 2

Independent Support

FOR IONIZERS AND COLLECTOR CELLS



Each ionizer and collector cell in the Raytheon Precipitator is individually supported for easy removal.

A Precipitator framework is a simple structure built to support the ionizers and collector cells. But *what kind of support?* Design with adequate strength to provide independent support for each ionizer and collector cell, and you gain three ways:

1. Any ionizer or collector cell can be slipped into place or removed without disturbing others.
2. The cells themselves may be comparatively light in construction, for easy handling.
3. The complete structure is easily installed . . . simply by lagging base plate to floor.

In *every* detail, RAYTHEON Industrial Precipitators represent *up-to-the-minute* design and sturdy construction. More on other details in later advertisements. For full facts *now*, write for Bulletin DL-P-503.

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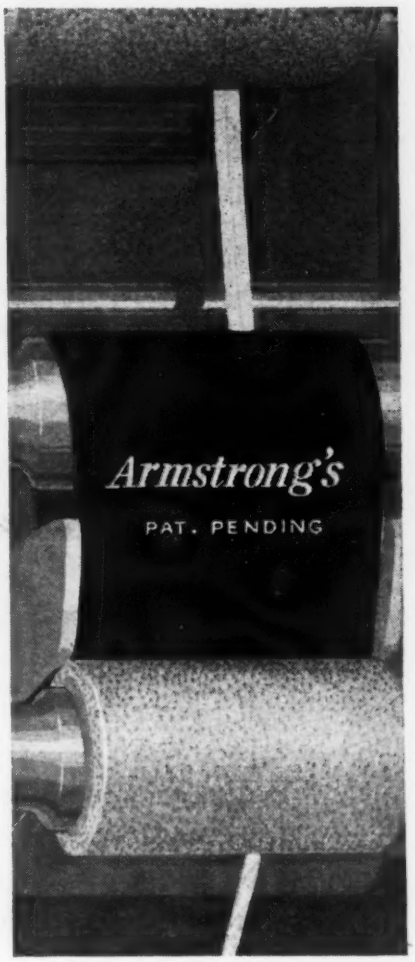
ACCOTEX APRONS

... after 5 years on mill frames

Many of Armstrong's Long Draft Aprons have been in continuous operation in leading mills for more than five years yet show little sign of wear, still keep producing top quality yarn. Thus you reduce apron costs when you install Accotex Aprons on your spinning and roving frames.

The extra-long life of Accotex Aprons is due to a special construction developed by Armstrong. Heavy layers of synthetic rubber enclose a sturdy, nonstretch cord interliner. This provides a substantial wearing thickness on *both* the inside and the outside of the aprons. These tough surfaces give years of uniformly fine service. The synthetic rubber used is nonoxidizing and not affected by oil. And since Accotex Aprons are seamless, they won't tear or break open during operation.

Prove the durability and economy of Armstrong's Accotex Aprons on your own frames. Your Armstrong representative will gladly help you arrange a test installation. Ask him for samples, prices, and complete information. Or write today to Armstrong Cork Co., Textile Products Department, 8305 Arch St., Lancaster, Pa.



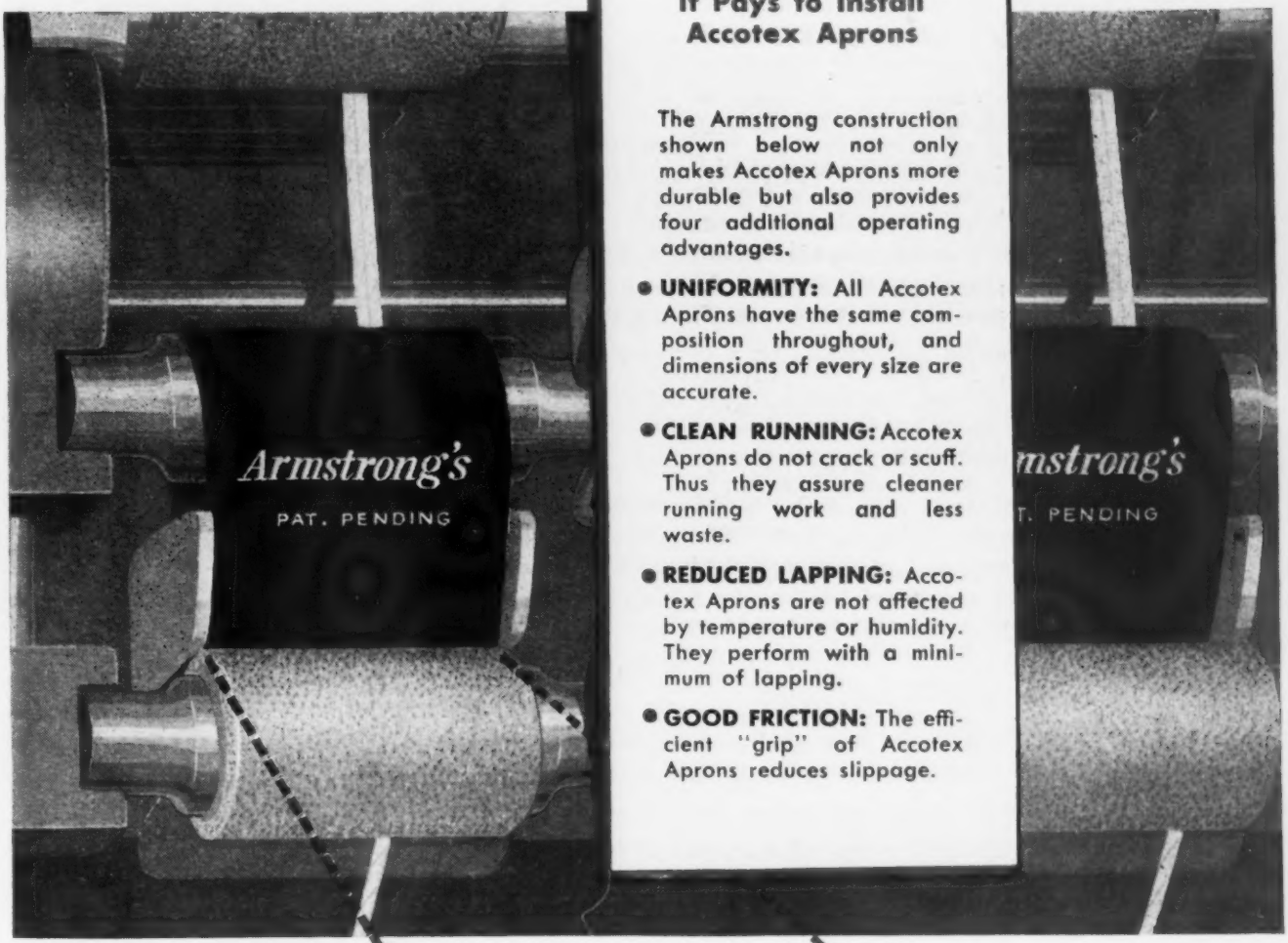
Also by the makers of Accotex Aprons . . . the Accotex Cot

The most widely used textile roll coverings, Accotex Cots are the result of the same specialized research and technical skill that produced the Accotex Apron. Here are eight reasons why Accotex Cots spin higher quality yarn and increase poundage.

1. **Long Service**—Accotex Cots are tough. And they can be rebuffed 5 or 6 times.
2. **Good Drafting**—Accotex Cots retain their excellent grip, because their cork-and-synthetic compositions resist slicking.
3. **Reduced Eyebrowing**—The resistance of cork-and-rubber to slicking minimizes eyebrowing.
4. **Reduced Lapping**—Accotex Cots have no affinity for textile fibers and are not affected by temperature or humidity.
5. **Good Start-Up**—Accotex Cots are non-thermoplastic, resist flattening.
6. **Solvent Resistance**—Accotex Cots are not affected by oil, water, dyes, or any of the commonly used textile solvents.
7. **Seamless Construction**—Accotex Cots have no seams—no structural weakness to cause premature failure.
8. **Quick Assembly**—Accotex Cots are ready glued for easier, quicker assembly.

ARMSTRONG'S ACCOTEX APRONS

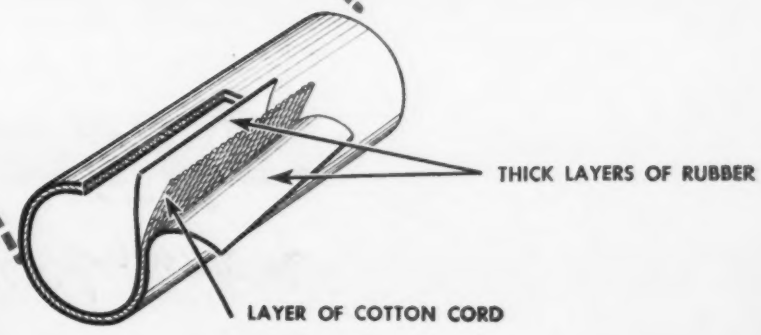
still produce quality yarn



4 More Reasons Why It Pays to Install Accotex Aprons

The Armstrong construction shown below not only makes Accotex Aprons more durable but also provides four additional operating advantages.

- **UNIFORMITY:** All Accotex Aprons have the same composition throughout, and dimensions of every size are accurate.
- **CLEAN RUNNING:** Accotex Aprons do not crack or scuff. Thus they assure cleaner running work and less waste.
- **REDUCED LAPPING:** Accotex Aprons are not affected by temperature or humidity. They perform with a minimum of lapping.
- **GOOD FRICTION:** The efficient "grip" of Accotex Aprons reduces slippage.



ACCOTEX COTS
CORK COTS

HYCAR AMERICAN RUBBER LATEX...

a new material for impregnating and coating fabrics, fibres, and threads

HYCAR latex, when used as a coating or impregnant for even inexpensive materials, imparts many desirable properties not easily obtained with other coatings and impregnants.

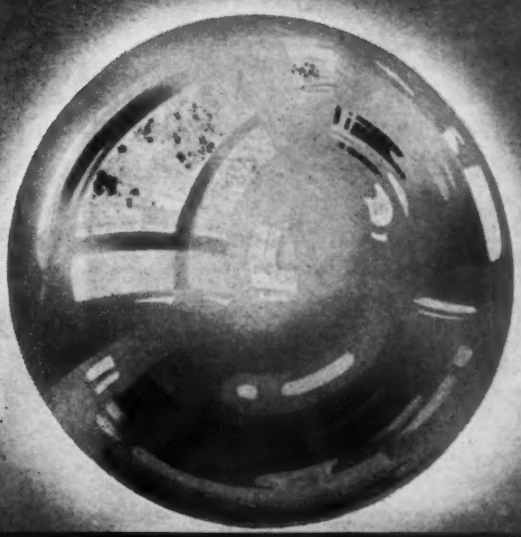
For example, high resistance to oils, chemicals, abrasion, and flexing—to name a few—are added in very desirable degrees by HYCAR latex, used as an impregnant or a coating. And HYCAR-impregnated materials may then be coated with any one of a number of other materials to impart additional properties.

All of this can be done, safely and simply, with HYCAR latex, because it's an inherently easy and safe material to handle. No vulcanization is required. Normal drying times are used. No explosive solvents need be handled. Nor is there any need for cumbersome and costly solvent recovery systems.

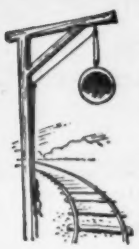
We would be glad to work with you on any problems relating to the use of HYCAR American rubber latex. For more information write Dept. HL-3, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio.

Hycar
Reg. U. S. Pat. Off.
American Rubber

B. F. Goodrich Chemical Company
A DIVISION OF THE B. F. GOODRICH COMPANY



High Ball for Industry



In the old days, on the railroads, a ball was used to signal the trains. A high ball meant "Clear track—full speed ahead."

Today, other balls give the go ahead sign—this time, to industry. We speak of the tough, forged steel balls in New Departure ball bearings.

Because these famous precision-made bearings are ball bearings, they give industry many advantages. New Departure ball bearings take heavy loads from *any direction* with a single bearing.

They support parts mounted in any position—hold them permanently in place with extreme accuracy. They permit higher speeds and *faster production*. They say—to all of industry—"Full speed ahead." Write for your copy of the free booklet, "Why Anti-Friction Bearings."

nothing rolls like a ball

NEW DEPARTURE
forged steel
BALL BEARINGS

3464

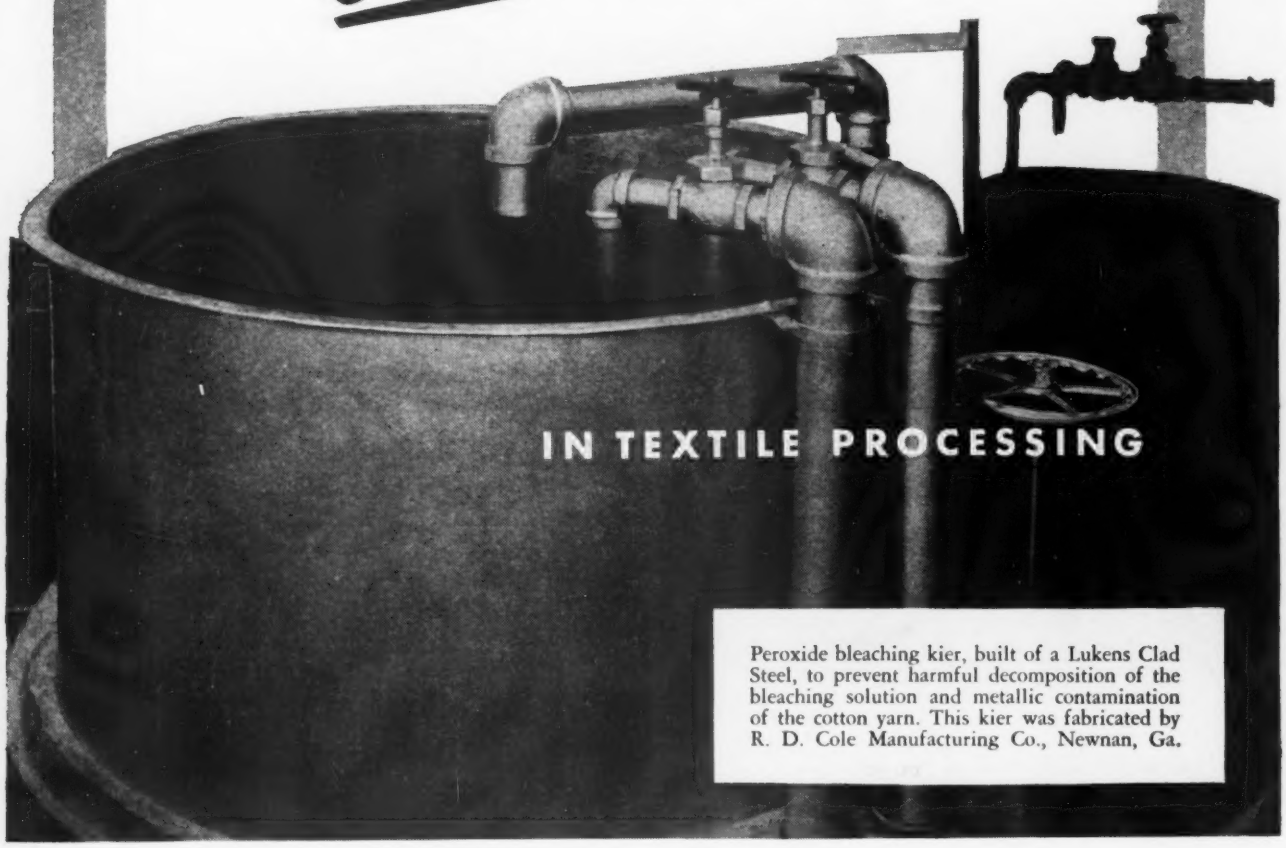
6 VITAL ADVANTAGES

- Higher speeds
- Greater accuracy
- Simplified design
- Every kind of load
- Lower maintenance costs
- Less friction — less wear

STAINLESS TO RESIST CORROSION

CLAD TO REDUCE COST

IN TEXTILE PROCESSING



Peroxide bleaching kier, built of a Lukens Clad Steel, to prevent harmful decomposition of the bleaching solution and metallic contamination of the cotton yarn. This kier was fabricated by R. D. Cole Manufacturing Co., Newnan, Ga.

WELL-KNOWN advantages of solid stainless steel for textile processing equipment can be obtained, at substantial savings, with Lukens Stainless-Clad Steels. They are the result of over 17 years of experience in producing clad steels, with numerous applications in the textile industry.

Lukens Stainless-Clad Steels are corrosion-resistant to many acids, easily cleaned, and durable.

They are furnished in economical cladding thicknesses from 5% to 50%, and in plate sizes from 3/16" to over 3" thick, or up to 178" wide. The cladding thickness is uniformly maintained, employing the proper type of stainless for the particular application.

Additional information on Lukens Stainless-Clad Steels is offered in the new Bulletin 338; on Lukens Nickel-Clad, Inconel-Clad and Monel-Clad Steels in Bulletin 255. Please write for copies. Lukens Steel Company, 406 Lukens Building, Coatesville, Pa.

LUKENS

Nickel-Clad Stainless-Clad
Inconel-Clad Monel-Clad
STEELS

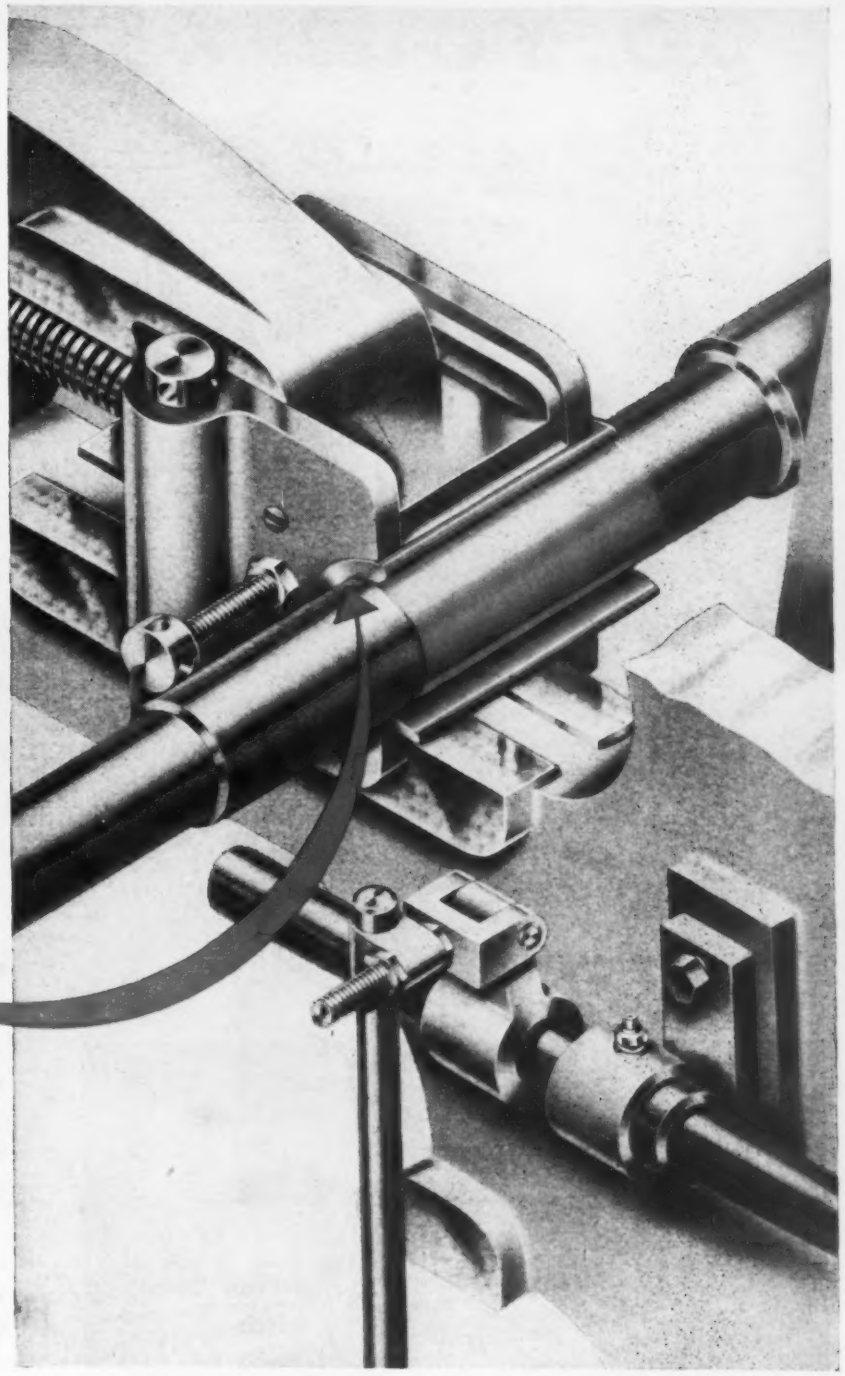
SOLID METAL ADVANTAGES WITH CLAD STEEL ECONOMY

Inside Knowledge on Lubrication Problems

—PRESSURE—

This is One of a Series of Messages on Common Problems in Your Plant

Look Out for a Squeeze Out!



A SQUEEZE-OUT! That's what you're likely to get on this print machine mandrel bearing, unless you select the right lubricant.

Terrific pressures run as high as 800 pounds per square inch. Heat, generated by the pressure, adds to the difficulty.

The grease that guards this bearing must not squeeze out under these pressures or melt down and run out at the high temperatures.

Tough, wear-resisting Gargoyle Block Greases are solving this problem in many textile mills. Specifically designed for jobs like this, these high-quality lubricants, properly applied, *stay put* despite the high pressures and temperatures.

Consult your Socony-Vacuum Lubrication specialist for advice on the correct grade Gargoyle Block Grease for your mandrel bearing.

SOCONY-VACUUM OIL CO., INC.
and Affiliates: Magnolia Petroleum Company
General Petroleum Corporation

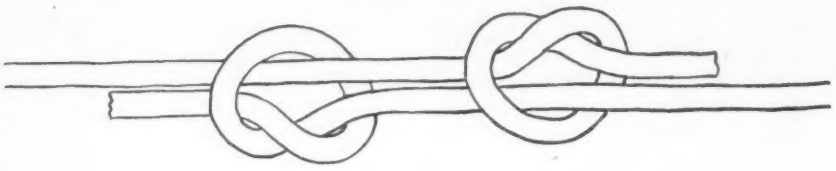
GARGOYLE Lubricants

SOCONY-VACUUM

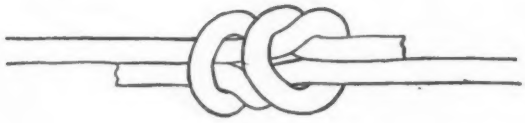
Socony-Vacuum Correct Lubrication

FOR EVERY MACHINE . . . EVERY OPERATING CONDITION

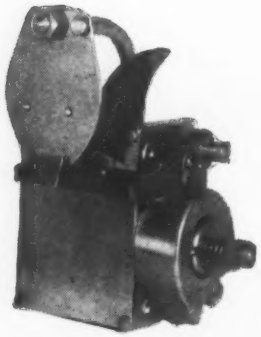
DO YOUR KNOTS SLIP?



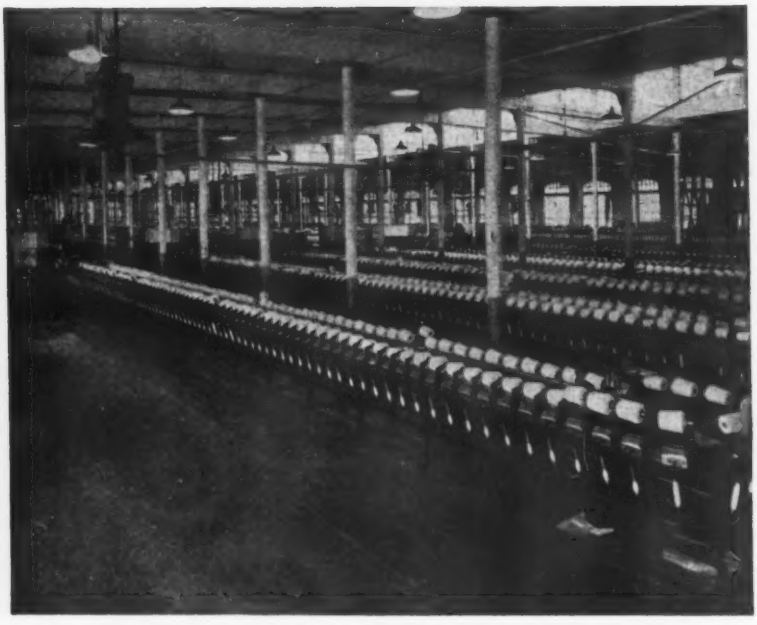
USE THE FISHERMAN'S KNOT



TWO SINGLE KNOTS PULLED UP AGAINST EACH OTHER



The knot tier is a small precision made unit that can be replaced by a spare knotter in two minutes



All of our Traveling Spindle Winders tie this small, smooth, non-slipping Fisherman's knot

ABBOTT MACHINE COMPANY

WILTON, N. H.

SANDOZ PRESENTS *The color achievement of the month*

Bassinet Blue BY CHATHAM

And Chatham Manufacturing Company, makers of the famous Chatham Baby Blanket, employs a wide range of other colors for its *complete* line of blankets.

"Chatham Makes Good Blankets" is becoming a buy-word for American women, and Sandoz is proud to be among Chatham suppliers, furnishing dyes that Chatham can depend upon for constant quality—efficiency in handling, fastness in service.

Among recent Sandoz developments is Brilliant Alizarine Milling Blue 2RL, a new acid dyeing blue producing bright royal blue tones that are fast to light, milling, washing, perspiration and salt water. Like its well known predecessor, Brilliant Alizarine Milling Blue BL, it obtains high fastness properties without chrome. It is the ideal color for "Baby Blues" for blankets, sweater and bathing suit work—as well as for more brilliant effects in men's and ladies' wear.

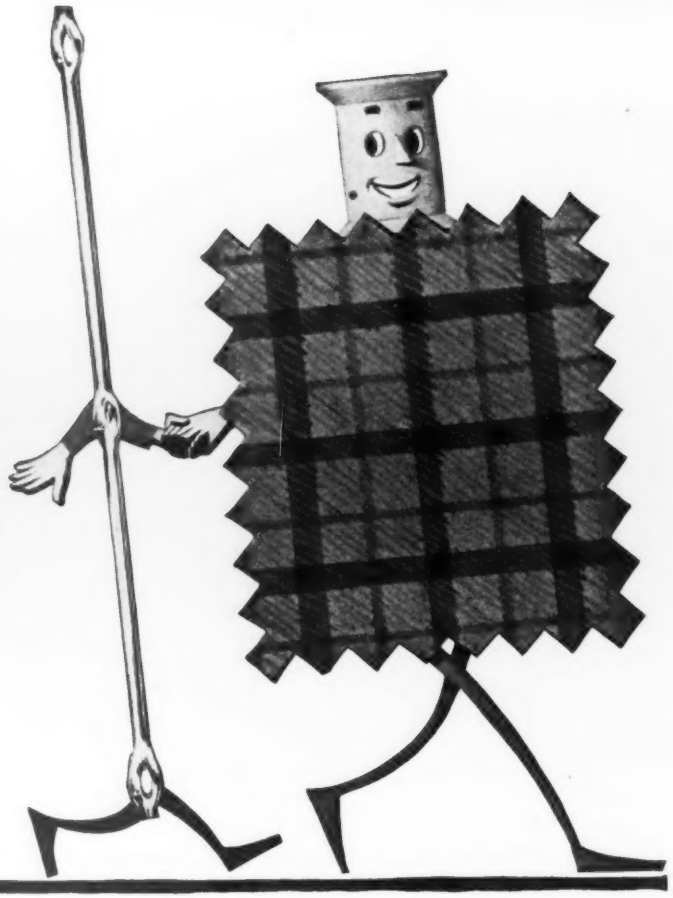
For acid, chrome or direct dyes... or auxiliary chemicals . . . for both natural and synthetic fibres . . . be guided by the successful "color achievements" you have been seeing in these Sandoz advertisements. Sandoz application laboratories are located in New York, Boston, Philadelphia, Los Angeles, Charlotte, Toronto, where stocks in wide range are carried. Other branches in Chicago, Paterson and Providence.

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N.Y.

SANDOZ *thinks ahead with textiles*

S SANDOZ

STAINLESS and TEXTILES go "HAND IN HAND"



The first textile mill to use stainless steel for dye vats, bleach tanks and other equipment really started something. Today this bright, clean, rustless metal is the standard of the industry—and with good reason.

Take loom parts, for example. Many of these were made of plated metals in years past. Eventually the thin plating wore off, leaving a rough, rustable surface dangerous to fabrics. Rusted heddles, for example, often stain or snag yarns. But Armco research engineers, working closely with textile manufacturers, have found a practical design for a stainless steel heddle. Solid, rustless metal all the way through—with a smooth, easy-to-clean surface—ARMCO Stainless is "made to order for the job."

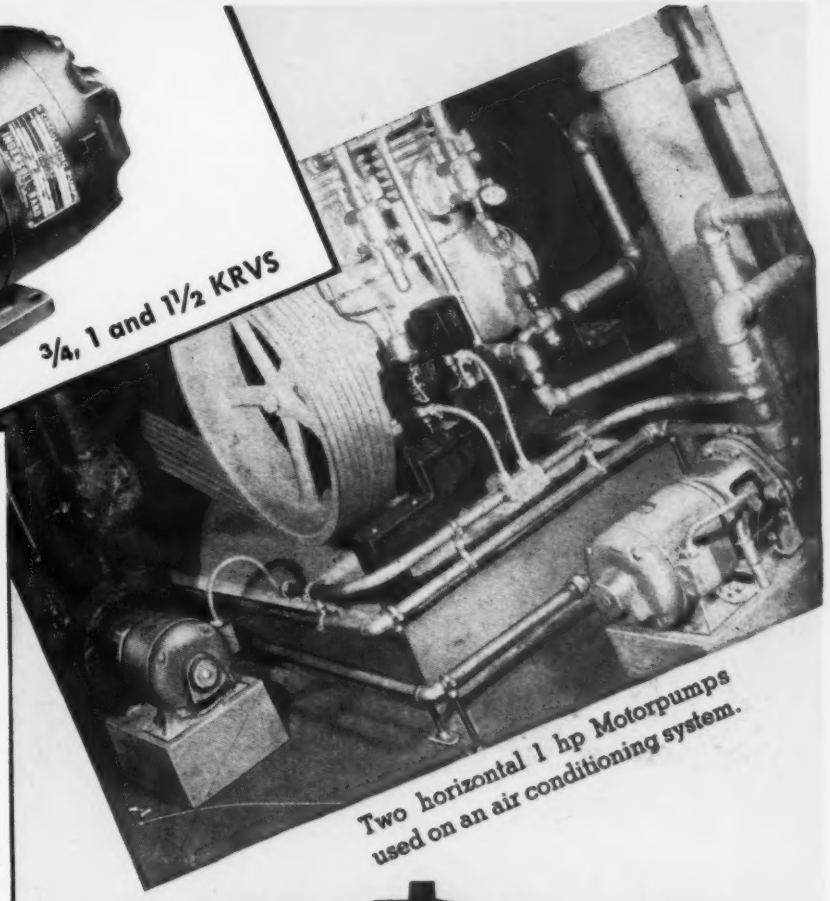
This natural alliance of textiles and stainless steel has carried over into much other mill equipment and parts. Today stainless reeds and thread guides . . . spindles, valves, screens, spool-yarn racks and yarn-handling baskets are saving money for manufacturers, and helping them produce better quality textiles.

There is a grade of ARMCO Stainless sheets, strip, bars and wire for practically every application in your mill. For full information get in touch with your equipment fabricator, or write to us. Just address The American Rolling Mill Company, 451 Curtis Street, Middletown, Ohio. Export: The Armco International Corporation.

STAINLESS ARMCO STEEL

THE AMERICAN ROLLING MILL COMPANY

• SPECIAL-PURPOSE SHEET STEELS • STAINLESS STEEL SHEETS, STRIP, BARS AND WIRE



Two horizontal 1 hp Motorpumps used on an air conditioning system.

MOTORPUMP

THE WEATHER MAKER

MOTORPUMPS are the heart of much air conditioning equipment. You can select just the right unit for any job . . . for evaporators, humidifiers, air conditioning units or general circulating service.

The KRV units illustrated range in capacities from 5 to 200 gpm for heads up to 140 ft. Larger sizes are available in capacities up to 1800 gpm for heads up to 600 ft. The Motorpump is made in horizontal, immersion or sidewall type of mounting with a complete range of sizes from ¼ to 40 hp.

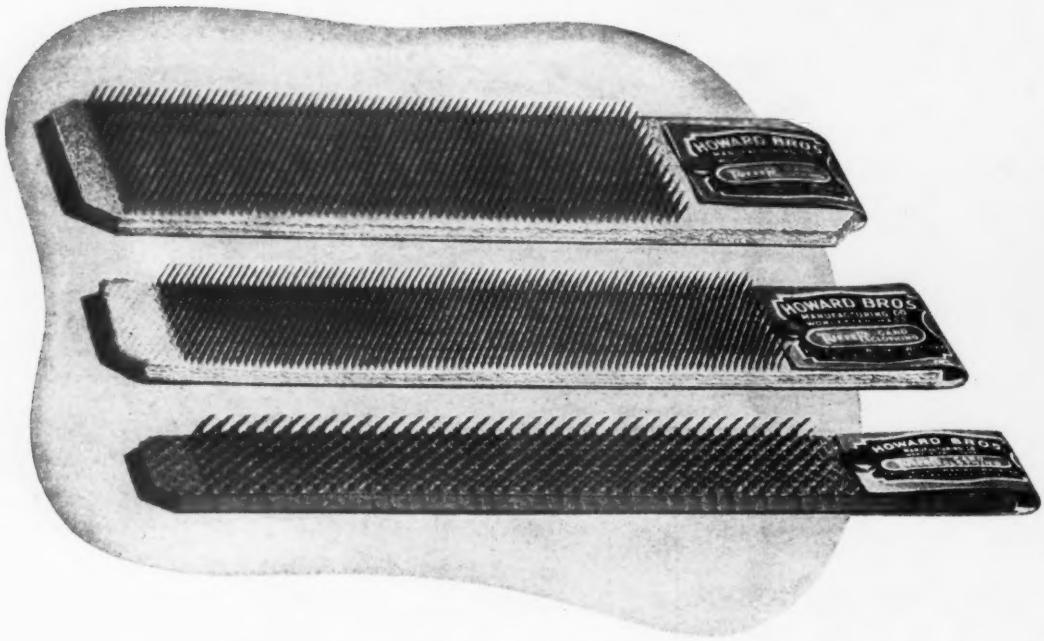
Our experienced engineers or your nearest Ingersoll-Rand Distributor will be glad to give you full details. Ingersoll-Rand Company, Cameron Pump Division, 11 Broadway, New York 4, N. Y.

Ingersoll-Rand

11 BROADWAY, NEW YORK 4, N. Y. 9-751

COMPRESSORS · AIR TOOLS · ROCK DRILLS · TURBO BLOWERS · CONDENSERS · CENTRIFUGAL PUMPS · OIL AND GAS ENGINES

You Can Depend On "TUFFER" PRODUCTS



They Improve Production All Along the Line . . .

Tufferized Card Clothing—for better quality and greater production and efficiency of operation!

Developed and exclusively owned and used by Howard Bros., the Tufferizing Process cuts and forms wires with an accuracy never before attained in the manufacture of Card Clothing. The Tuffer Patented Foundation is made of four plies of specially woven fabrics bonded with oilproof glue. It is strong and stretch-resistant, yet pliable enough to go on the cylinders easily. It is flexible enough to promote the proper carding action of the wires.

Howard representatives will gladly talk over your problems and make workable recommendations. Feel free to ask for their advice.

Tuffer Tension Regulator—This new device, driven by motor or operated by hand winch, speedily applies Card Clothing with absolutely uniform tension. Using the Tuffer Tension Regulator one man and a helper can clothe the most difficult roll in an amazingly short time. Write for complete information.

Tuffer Napper Clothing — Tufferized Napper Clothing has clean, smooth needle points that produce a deep, fluffy nap . . . the Tufferizing Process of cutting and setting the wire in Napper Clothing assures uniformity.

Midgley's Improved Hand Stripping Card—Indestructible backs and handles... Steel clamps protect edges of the card and hold them securely to the back.

Howard's Special Hand Stripping Card—Ruggedly constructed...pressed-steel handle . . . made of three-ply indestructible wood for strength and light weight.

Hand Sampling Cards—Designed for dyers and wool dealers.

Brushes—For finishing. Rust-resisting wire. Velvet mills will obtain smooth, even finish to their cloth by using Howard Brushes.

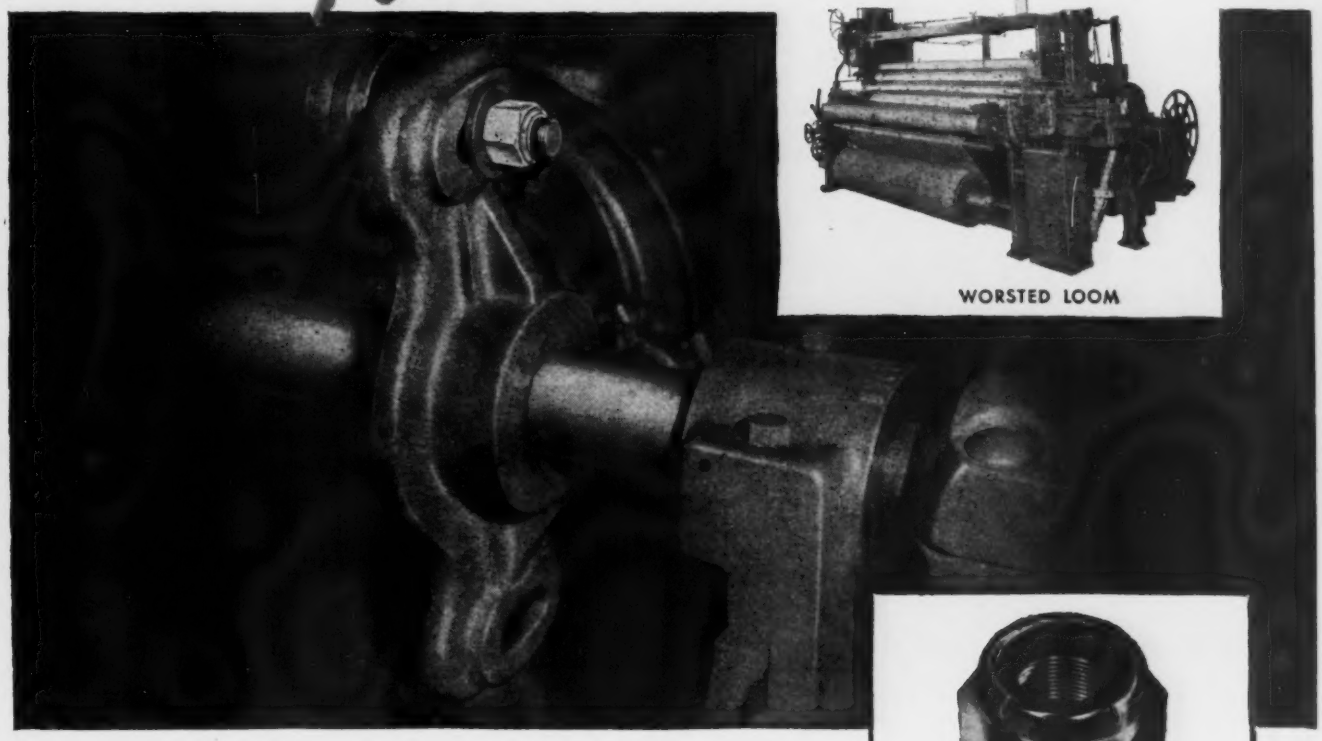
HOWARD BROS. MFG. CO. WORCESTER 8, MASSACHUSETTS Phone 6-6207

Southern Plants—Atlanta, Ga., Phone Walnut 5250 Gastonia, N. C., Phone Gastonia 1162 **Branches**—Philadelphia, Pa., Phone Germantown 8-0500 Blanco, Texas

Direct Representation in Canada

A-6

SELF-LOCKING *Prevents Power Loss* **AT THE PICK ROLL STUD**



WORSTED LOOM

The Red Elastic Collar protects prestressed settings against IMPACT! VIBRATION!

Once the picking roll stud is positioned in the picker arm slot for proper timing its prestressed fastener should hold tight against the slamming vibration of the loom.

A loosened roll stud fastener permits loss of power, destruction of the picking roll arm and the breaking of the splines on the picking roll stud. And even more important, it is the direct cause of more unnecessary down time!

Here's a suggestion to loom fixers. Whenever repairs or adjustments make it necessary to remove an ordinary fastener, replace it with an ESNA Elastic Stop Nut. They're immediately available from stock.

Re-usable Elastic Stop Nuts—with the Red Elastic Collar—are easily adjusted or removed. They do not deform the bolt, damage the threads or gall the finish. They provide dependable protection against Vibration, Thread Corrosion, Thread Failure, and Liquid Seepage.

ESNA engineers are now ready to study your fastener problems. Address: Elastic Stop Nut Corporation of America, Union, N. J. Sales Engineers and Distributors are conveniently located in many principal cities.

LOOK FOR THE RED COLLAR THE SYMBOL OF SECURITY

It is threadless and dependably elastic. Every bolt—*regardless of commercial tolerances*—impresses (does not cut) its full thread contact in the Red Elastic Collar to fully grip the bolt threads. In addition, this threading action properly seats the metal threads—and eliminates all axial play between the bolt and nut.

All ESNA Elastic Stop Nuts—*regardless of size or type*—lock in position anywhere on a bolt or stud. Vibration, impact or stress reversal cannot disturb prestressed or positioned settings.

ELASTIC STOP NUTS

INTERNAL WRENCHING

ANCHOR

WING

SPLINE

CLINCH

GANG CHANNEL

CAP

PRODUCTS OF: **ELASTIC STOP NUT CORPORATION OF AMERICA**

FAIRBANKS-MORSE

A time-honored name in scales

★ ★ ★ ★ ★

Long years of manufacturing experience—of lastingly accurate weighing service—that is the background you will find in scales bearing the Fairbanks-Morse name.

The services they perform, the time and money they save, have given them an envied reputation for dependable quality.

Skilled workmanship, quality materials, and unending research have combined to make this possible . . . will continue to give Fairbanks-Morse Scales a proud position of leadership in every field of industry.

Fairbanks, Morse & Co., Chicago 5, Illinois.

Fairbanks-Morse

A name worth remembering

Diesel Locomotives
Diesel Engines
Generators • Motors
Pumps • Scales
Magnetos • Stokers
Railroad Motor Cars
and Standpipes
Farm Equipment

THE WHOLE ~~TOWN'S~~ INDUSTRY'S TALKING!

About the NEW Whitin Model "C" High-Speed Warp Knitting Machine. It's Tomorrow's Tricot Machine in production TODAY!

No wonder they're talking . . . there's plenty to talk about! Being "first" is a tradition at Whitin. Manufacturers of the first American-built high speed warp knitting machine, Whitin leads again with its revolutionary Model "C", featuring these important "firsts" . . .

"BUTTED" NEEDLES . . . first on high-speed tricot. Proved by a three year mill test, the "butted" needle bar stays in gauge under all operating conditions, saves leading operations — costs less to operate or replace. Optional equipment on the new Model "C".

ELECTRICAL CONTROL . . . eliminates antiquated handwheels, reduces stop marks in the fabric and permits the knitting cycle to be stopped, started, run slowly or advanced through small increments by means of an electrical inching unit.

IMPROVED GUIDE BAR ASSEMBLY . . . allows bars to be swung into an easily accessible position for threading without being removed from the machine, thus preventing damage to bar and guides.

Designed to knit up to 500 courses per minute and featuring automatic pressure lubrication to all bearings, except cam shaft and followers, the Whitin Model "C" uses spools up to 21" diameter on a system of locked yarn beams that become a single rigid unit in knitting position. This combats vibration, and together with a simplified take up unit, provides even tension that results in clean, streakless production of quality fabrics, both natural and synthetic. In no other machine, in production today, is to be found such an array of long-sought knitting features. Be first to get the full story on this amazing Model "C". Write TODAY!

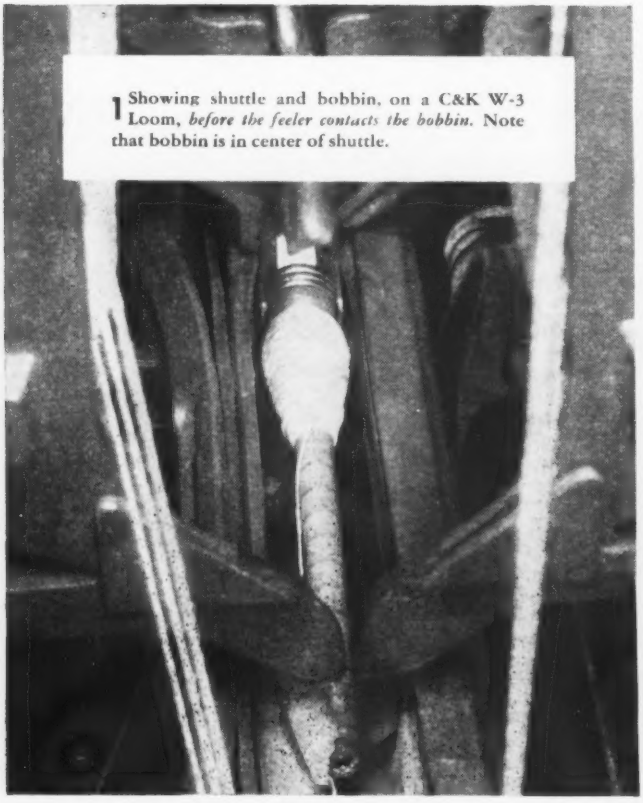
Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS
CHARLOTTE, N. C. • ATLANTA, GA.

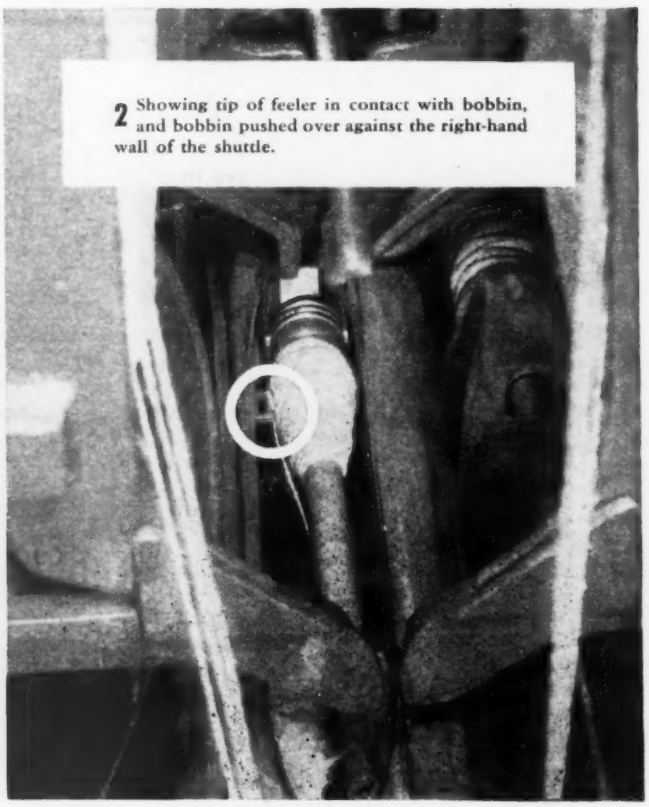
How to Gain and Maintain a

Delicate Balance

in the operation of "Side-Slip" Feelers on C&K Looms



1 Showing shuttle and bobbin, on a C&K W-3 Loom, *before the feeler contacts the bobbin.* Note that bobbin is in center of shuttle.



2 Showing tip of feeler in contact with bobbin, and bobbin pushed over against the right-hand wall of the shuttle.

Look again through the eyes of C&K's special high-speed camera, and this time you see (looking straight down on the loom's magazine) what happens when the feeler contacts the bobbin in the shuttle of a C&K W-3 Loom.

Why all the scientific interest in feelers? Because an efficient feeler should always be positive in action on any type of yarn . . . hard, soft, slick, hairy. *Yet the feeler should never sever the yarn.*

So Question A is: "How heavy a blow does the feeler strike the bobbin?" And as you can see from Photo #2, there's a split second of time in which the bobbin is thrown against the back wall of the shuttle with considerable force. But *exactly how much* force?

To answer that, electric strain gages are wired to the feeler-finger. Next, a recording oscillograph is hooked up to the gages to obtain a permanent record of the strain cycle, and calculations from this record indicate the force of the feeler-blow.

Then, reading between the lines of this oscillograph record, there appears definite information as to where and how the feeler may be improved in design, both as to pattern and material. *Which spotlights the fact that since the force of the blow is due to the acceleration of mass, it seems advisable to reduce both mass and cross-section by use of light metals.*

This is one of many correlated studies now in process in the C&K Engineering Research Laboratories. And each of these studies has the same end-objective . . . to add *proven improvements* to C&K Looms in order to increase speed, improve quality of fabric, reduce the number of loom-stops . . . and, in every other possible way, to cut *your* weaving costs.

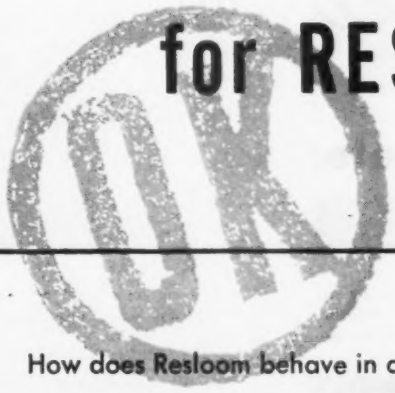
Crompton & Knowles Loom Works

WORCESTER 1, MASSACHUSETTS, U. S. A.
PHILADELPHIA, PA. • CHARLOTTE, N.C. • ALLENTOWN, PA.

CROMPTON & KNOWLES JACQUARD & SUPPLY CO., PAWTUCKET, R. I.

between Today's Knowledge . . . and Tomorrow's Looms

Here's important news for RESLOOM-ed wool



How does Resloom behave in cleaning operations? . . . how long does it last? These questions are always asked about a new textile chemical . . . and the National Institute of Cleaning and Dyeing has answered them in respect to Resloom in an official bulletin, stating, in brief:

1. WET CLEANING

Resloom treated wool will be easier to handle in the wet cleaning department than ordinary wool. Wet cleaning procedures ordinarily used in dry cleaning plants should cause no shrinkage whatever.

2. DRY CLEANING

Continued dry cleaning in either petroleum solvents or synthetic solvents (or continued wet cleanings) will not remove the finish.

3. SPOT CLEANING

Spotters will have no particular problems in stain removal. In general stains are more easily removed from Resloom treated wool than from ordinary wool.*

*From "Bulletin Service," Nov. 19, 1946, National Institute of Cleaning and Dyeing, Silver Spring, Md., George P. Fulton, Research Director.

A reprint of this complete bulletin, prepared by this independent laboratory, plus other information on Resloom, may be had by writing direct to: MONSANTO CHEMICAL COMPANY, Textile Chemicals Department, 140 Federal Street, Boston 10, Mass.

Resloom: Reg. U. S. Pat. Off.

MONSANTO
CHEMICALS ··· PLASTICS

SERVING INDUSTRY . . . WHICH SERVES MANKIND

Again! Whiteness and hiding power of one coat prove the superior quality of...

Yorgey's
CLEANSERS AND DYERS

FAIRVIEW and SEVENTEENTH

READING, PENNSYLVANIA
Phone 7331

January 14, 1947

Glidden Company
3rd & Bern Streets
Reading, Penna.

Attention: Mr. L. O. Smith

Dear Sir:

Some years ago when we built our new plant we used your Spray Day Lite. Recently we had occasion to paint our new addition and naturally we used your Spray Day Lite again.

We were greatly pleased with the whiteness and the hiding qualities on the one coat application and can recommend it to anyone who desires this beautiful finish.

Very truly yours,

YORGEY'S CLEANSERS & DYERS

JEY:GLK

Now there's also
BRUSH-DAY-LITE

All of the established advantages of famous GLIDDEN SPRAY-DAY-LITE are now offered you in BRUSH-DAY-LITE, especially formulated for brush application.

RESTOR-IZING
KEEPS CLOTHES CLEAN LONGER

★ ★ **Glidden**

SPRAY-DAY-LITE

Not just one—6 big advantages make Glidden SPRAY-DAY-LITE the textile industry's favorite paint for interiors . . .

1. SPRAY-DAY-LITE gives conventional two-coat results in only one coat.
2. Increases lighting efficiency by giving *maximum* light reflection and diffusion.
3. Provides smooth, solid covering over grimy, dirty and badly discolored surfaces of almost any type.
4. Its intense white does not yellow with age (also available in 10 attractive colors.)
5. Durable, egg shell finish eliminates eye-straining glare—washes like tile.
6. Sprayed or brushed, it does not sag or run; produces little fog or mist when sprayed.

Time-Tested

Pacemaker in Paints

Free! **A Practical Guide to "Sight Perfection" in Plants by Glidden Color Authorities**

Tells and shows how to follow scientific, E-Z-C Color Planning in painting interiors and machines to ease eyestrain, boost production, reduce accidents. Send coupon for it today. If you don't find all the guidance you need in this book, the Glidden Color Studio will design color plans tailored to your particular needs—without charge.

MAILING THIS COUPON TODAY WILL PAY YOU DIVIDENDS AT YOUR NEXT PAINTING!

THE GLIDDEN COMPANY
Dept. T-5, 11001 Madison Ave., Cleveland 2, Ohio

- ☐ You may send your book on the scientific use of color in industrial plants, "Sight Perfection."
- ☐ You may send your SPRAY-DAY-LITE Color Chart showing the 10 attractive shades and suggested color combinations.
- ☐ You may have your representative call and demonstrate SPRAY-DAY-LITE in our premises without obligation on our part.

NAME _____

COMPANY _____ TITLE _____

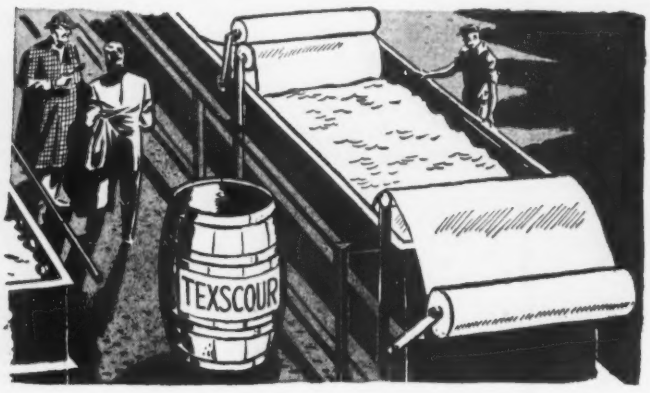
ADDRESS _____

CITY & STATE _____

Another Adventure of the Armour Soap Sleuth

. . . mused the Soap Sleuth, fingering his violin. "I had just returned from helping another chap with his scouring problems, when suddenly . . .

"The door of my 31st Street Laboratory burst open! A frantic mill manager rushed in muttering about the felting and shrinking of his wool piece goods! I set out for clues.



"At first, I thought it might be a case of the wrong kind of soap. But when I saw *Armour's Texscour* being used for their scouring of wool piece goods, I was convinced the manager knew his soaps. You see, TEXSCOUR, the red oil base flake soap with a low titer of 8-12° C., gives quick, lasting suds. TEXSCOUR cuts grease, knocks out soil and foreign material – rinses fast and completely, gets wool clean and white.

"Anyway, one check of the scouring bowls, and I didn't need my trusty glass to spot the trouble. *The liquor temperature was much too high! Good* scouring must be done at *low* temperatures to keep wool from felting and shrinking. That manager now gets a *better, cleaner* scour using TEXSCOUR at the right temperatures. Incidentally, I've helped with quite a few textile problems. A telephone call is all that's needed to get me on the job."

Armour INDUSTRIAL Soap

Armour and Company, 1355 W. 31st., Chicago 9, Ill.

Helping Hand in the Weave Room

Hunt Spreaders Stabilize Looms . . . Increase Output

Hunt Spreaders have given new production impetus to lazy looms in hundreds of textile mills from Maine to Texas. These mills are exceeding production goals, making better quality fabrics, and lowering per-yard costs with the help of Hunt Spreaders. Check the advantages of equipping your looms with patented Hunt Spreaders. . . . Write today for detailed information.

Write for the new Mountain City Catalog.

Hunt SPREADERS

• ADD YEARS TO LOOM LIFE •

PRODUCT OF

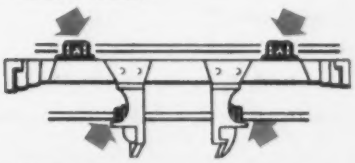
MOUNTAIN CITY FOUNDRY & MACHINE CO.

200 ACADEMY ST. GREENVILLE, S. C.

Remember the Early Auto?

How it shook, shimmied and vibrated! How it bucked like a broncho! It had bearings only at the ends of the crankshaft.

When additional bearings were added along the crankshaft greater speed and smoother performance became a reality.



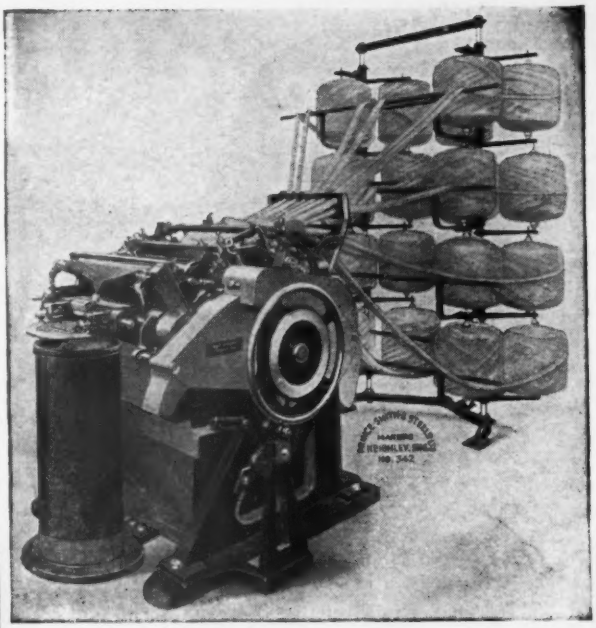
Hunt Spreaders apply this same principle to looms. By adding 4 extra bearings they stabilize crankshafts and camshafts. They brace loom sides, reduce vibration, and permit greater speeds. Results: smoother operation, fewer breakdowns, and more cloth output per loom.

★ *High Production*

★ *Ease of accessibility and setting*

★ *Rigid construction*

features of



RECTILINEAR COMB WIDE MODEL

THE *rectilinear* OR FRENCH COMB

for wool and other fibres

FOR ALL YOUR MACHINERY REQUIREMENTS IN

worsted

We are able to offer complete plants on the French or Continental systems incorporating the above machine

• • •

Agents, U. S. A. and Canada—English system machinery. Atkinson, Haserick & Co., 211 Congress St., Boston, 6, Mass.

Agents, U. S. A.-French system machinery. The Blake Electrical Mfg. Co., 178 Atlantic Ave., Boston 10, Mass.

P.S.S.-5

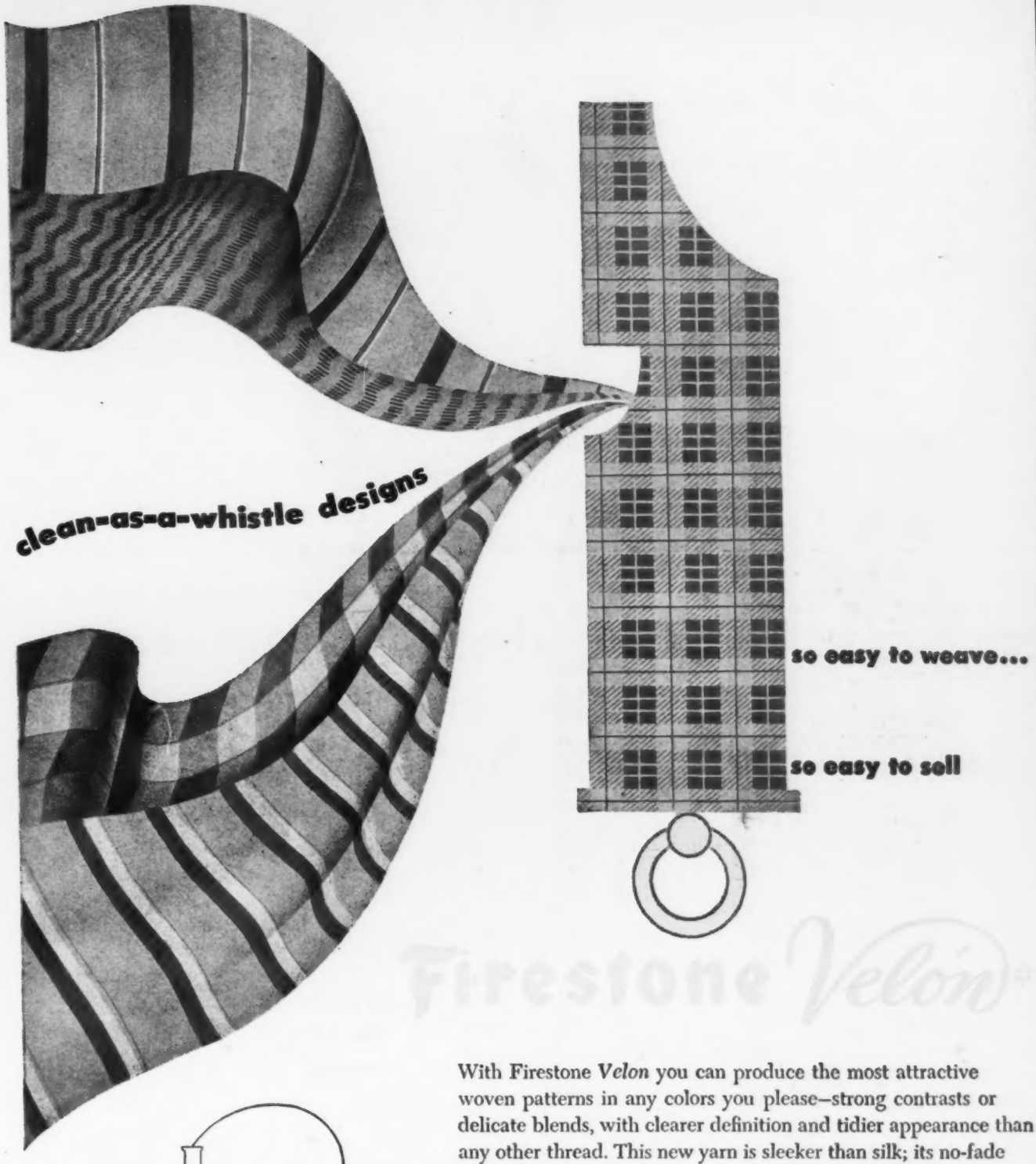
PSS & LTD

Prince·Smith & Stells Ltd.

INCORPORATING TAYLOR WORDSWORTH & Co LTD

CONCESSIONAIRES FOR ALL WORSTED MACHINERY MANUFACTURED BY PLATT BROTHERS & CO. LTD. ASA LEES & CO. LTD.

KEIGHLEY ENGLAND



With Firestone *Velon* you can produce the most attractive woven patterns in any colors you please—strong contrasts or delicate blends, with clearer definition and tidier appearance than any other thread. This new yarn is sleeker than silk; its no-fade colors run clear through.

Velon is as easy to work as conventional yarns, which means smooth production. No special equipment or skill is required to make the wonderful fabrics that defy dirt, staining, shrinkage, fading, wear and age—and which sell so easily. Write Firestone, Akron, for details and technical assistance.

LISTEN TO THE VOICE OF FIRESTONE MONDAY EVENINGS OVER NBC

BEST TODAY—STILL BETTER TOMORROW

Velon* THE FABRIC OF TOMORROW ON THE LOOMS OF TODAY

*TRADE MARK

INSURE

SAFELY

◆

INSURE

Safety

EMPLOYERS MUTUALS WRITE:

Public Liability . . . Automobile . . . Plate Glass . . . Burglary . . . Workmen's Compensation . . . Fidelity Bonds . . . Group Health, Accident, Hospitalization . . . and other casualty insurance . . . Fire . . . Tornado . . . Extended Coverage . . . Inland Marine . . . and allied lines of insurance. All policies are nonassessable. Branch offices in principal cities. Consult your telephone directory.

Here is the Inside Secret of safety-on-the-road for car and truck fleets

Here's a typical example of safety on the job, as engineered by Employers Mutuals for truck fleet operators.

Over seven years without a single serious accident—that's the proud record of one fleet operator with eighteen trucks on the road.

Safety meetings are the inside secret of this record of safety on the road and at loading platforms. These meetings, run by the drivers themselves, are part of the Fleet Safety Program set up by an Employers Mutuals Safety Engineer when this fleet was first insured with E-M.

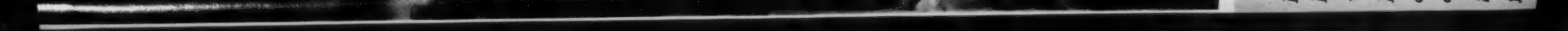
Every accident is analyzed. One driver's accidents were traced to passing cars at intersections. He was shown how this cut off both his vision and that of the driver he passed. He never had another "intersection" accident.

It was found that another accident-repeater could see straight ahead all right, but his angle of vision was limited. He was trained to turn his head, consciously, each way, when approaching an intersection. *He* stopped having accidents, too.

The drivers elect their own Safety Board. When the Board holds a driver responsible for an accident, he loses his chance for a safe driving award at the end of the year. And the men prize those bronze, silver, and gold "No Accident Driver" pins.

Flexibility is the keynote of E-M Safety Engineering. Educational work, lectures, movies, literature, posters, awards, inspections, training, or riding with the men—fleet policyholders use any part of the recommended program they wish.

The Fleet Safety Program is good business practice—it lowers the operating cost per unit, and serves to reduce workmen's compensation rates, also.



Ensemble by Norris-Conti

Dyes for coatings, suitings and custom shoe leathers, of course! But what of rouge, lipstick, face powder and nail enamel?

Whatever you wear, use or see it's likely to be colored with National Aniline dyes. For National alone makes every class of aniline dye and color...has had longer and broader application experience than any other American producer.

Specify National Aniline Technical Service and Dyes for assured results.

WHEREVER COLOR IS USED

National Aniline

DIVISION OF

ALLIED CHEMICAL & DYE CORPORATION

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ESTABLISHED 1840

HERE'S Safety

AND 24-HOUR PROTECTION

on the job...off the job!

Employers Mutuals leadership in safety engineering is nationally recognized. Started many years ago to reduce workmen's compensation losses, this safety work has now been extended to every type of insurance written by Employers Mutuals.

On the job
(WORKMEN'S COMPENSATION)

First a complete survey is made of machinery, methods, and surroundings. Specialists on various machines, ventilation experts, chemists, industrial nurses—all play their part.

Then recommendations are made for the elimination of all possible hazards.

Most important is the education of workers in safety principles. Regular safety meetings are organized. Accidents are discussed. Safety literature, posters, lectures, and films are supplied. Often incentives for safety are suggested.

Other suggestions may include the use of safety guards on machines; proper work clothes; safer working procedures; changes to eliminate occupational disease; establishment of first aid departments.

Finally, E-M safety engineers submit periodic reports, recapitulating accidents and analyzing them in detail.

Safety engineering means fewer accidents. And lower accident rates mean lower insurance costs.

Off the job
(GROUP HEALTH)

Employers Mutuals 24-hour protection means peace of mind to employees. Group health, accident, and hospitalization, as a supplement to your workmen's compensation insurance, assures them of protection on and off the job.

Relieved of the burden of medical, surgical, and hospital expenses, employees worry less, work better, produce more.

E-M safety engineering serves you here, too. Special literature on diet, lectures on health, directions for safety in the home and on the street help your employees and their families build better health and avoid accidents.

24-hour protection helps cut your accident rate, and with it the cost of your other insurance.

Employers Mutuals make insurance understandable

Ask the Employers Mutuals man about workmen's compensation, fleet, group health, or any other coverage you need. He will carefully study your requirements, explain the policies you need, and see that your policies are carefully written to meet your requirements.

Or write on your business letterhead. We'll be glad to give you the specific information you desire, and will enclose a free copy of "A Dictionary of Insurance Terms" to help make insurance understandable.
Address: Insurance Information Bureau, Employers Mutuals of Wausau, Wausau, Wis.

EMPLOYERS MUTUALS of WAUSAU

. . . MAKE INSURANCE UNDERSTANDABLE

EMPLOYERS MUTUAL LIABILITY INSURANCE COMPANY OF WISCONSIN Established 1911

EMPLOYERS MUTUAL FIRE INSURANCE COMPANY Established 1935

Home Office: WAUSAU, WISCONSIN

THE COCKER HIGH SPEED SECTION BEAM WARPER

with Magazine Cone Creel
and Eyeboard Stop Motion

Here is a machine which is skillfully engineered to give you greatly improved service.

Heavy construction, large diameter Journals, Bearings, etc., accurately turned and balanced Carrier Roll and Beam Cylinder, self-aligning Ball Bearings and many other features give maximum speeds with a minimum of vibration and wear.

Among the many other features of this Cocker High Speed Section Beam Warper are easily accessible and accurately fitted Beam Snubbers, remarkably convenient Beam Doffer, automatic Counter Clock, instantaneous Knock-off action and the very latest Magazine Type Cone Creels. For full details about this and other Cocker Warp preparation Equipment, write, telephone, or wire us.

COCKER
MACHINE and FOUNDRY
COMPANY
GASTONIA, NORTH CAROLINA

WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT.

Rugged Construction

★ ★ ★

Self-Aligning BALL BEARINGS

★ ★ ★

Accurately Turned and Balanced CARRIER ROLL & BEAM CARRIER ARMS

★ ★ ★

Easily Accessible Smooth Action BEAM SNUBBERS

★ ★ ★

Convenient BEAM DOFFER

★ ★ ★

5 HP MOTOR with built-in MAGNETIC BRAKE

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Automatic Electrical COUNTER CLOCK

★ ★ ★

Instantaneous KNOCK-OFF ACTION

★ ★ ★

Latest Type MAGAZINE CONE CREELS

★ ★ ★

EYEBOARD STOP MOTION

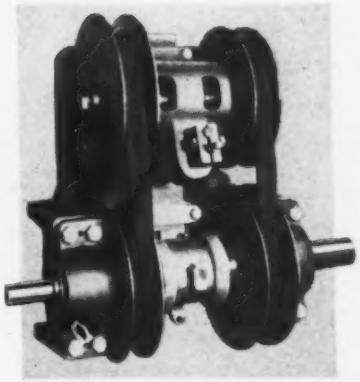
2.8 to 7½ hp
Now...
2 MORE ALLSPEED
SELECTORS JOIN THE
WORTHINGTON VARIABLE
SPEED DRIVE FAMILY
2 to 5 hp
1 to 3 hp
¼ to ¾ hp
MODEL E: 2.8 to 7½ hp; ratio 6 to 1; speed range 400/2400 (with 1725 RPM Input)
MODEL D: 2 to 5 hp; ratio 8 to 1; speed range 360/2880 (with 1725 RPM Input)
MODEL C: 1 to 3 hp; ratio 9 to 1; speed range 400/3600 (with 1725 RPM Input)
MODEL A: ¼ to ¾ hp; ratio 16 to 1; speed range 215/3450 (with 1725 RPM Input)

Now . . . it's easy to get peak production speeds at higher horsepowers, too!

Yes, you can now apply the many advantages of Worthington Allspeed Selectors to your heavier machines. The new D and E models have the same unique time-, space-, and money-saving features that in the past 4 years have made the lighter A and C models nation-wide favorites on applications requiring peak production speeds with precision control.

How to select the right size

To be sure of getting the right selector for the job, call in your nearby Worthington Distributor. He can select the one right unit for you in a matter of minutes. Ask him for a copy of the Worthington Allspeed Selector Bulletin . . . which proves that in variable speed drives, too, *there's more worth in Worthington. Worthington Pump and Machinery Corporation, Merchandising Division, Harrison, New Jersey. 36 District Offices throughout the U.S.*



Only Worthington Allspeed Selectors Offer All These Advantages

Belts in tandem permit operational smoothness not possible in single-belt drives . . . exclusive, automatic, positive belt-tensioning . . . high speed ratios in the smallest space . . . belts quickly changed without dismantling unit.

B7-3

WORTHINGTON

PRODUCTS BASED ON MARKET RESEARCH

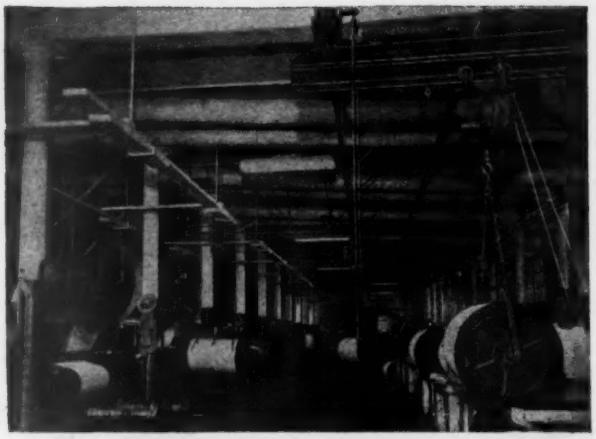
Centrifugal Pumps | Rotary Pumps | Steam and Power Pumps | Vertical and Horizontal Compressors | Multi-V-Drives | Variable Speed Drives

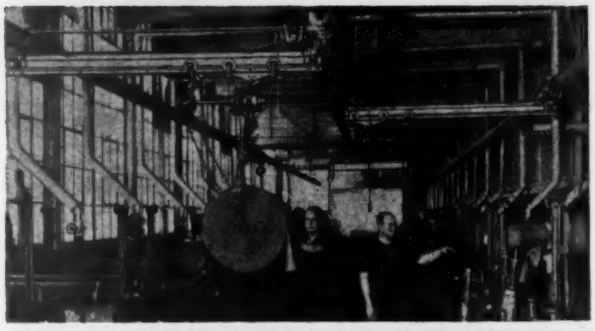
FREE MOVING CRANES

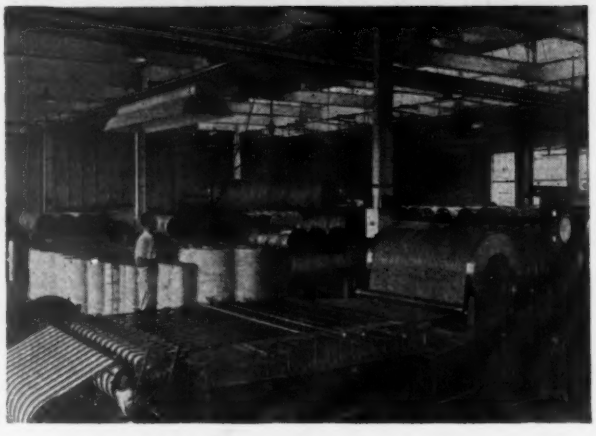
For

LOW COST HANDLING

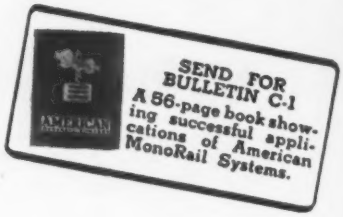
American MonoRail Cranes supply overall coverage. Handling is not tied down to craneways since interlocking devices permit transfer in any direction. Free moving cranes serve every square foot of operating area. American MonoRail Cranes are available for any type of job. Low cost installation dovetails with low cost operation. They offer all the advantages of lightness, easy movement, strength, live-load capacity up to 5 tons.







Consultation with American MonoRail engineers will reveal why American MonoRail Equipment has been selected to serve the nation's largest industrial plants. We invite your inquiry — no obligation of course.

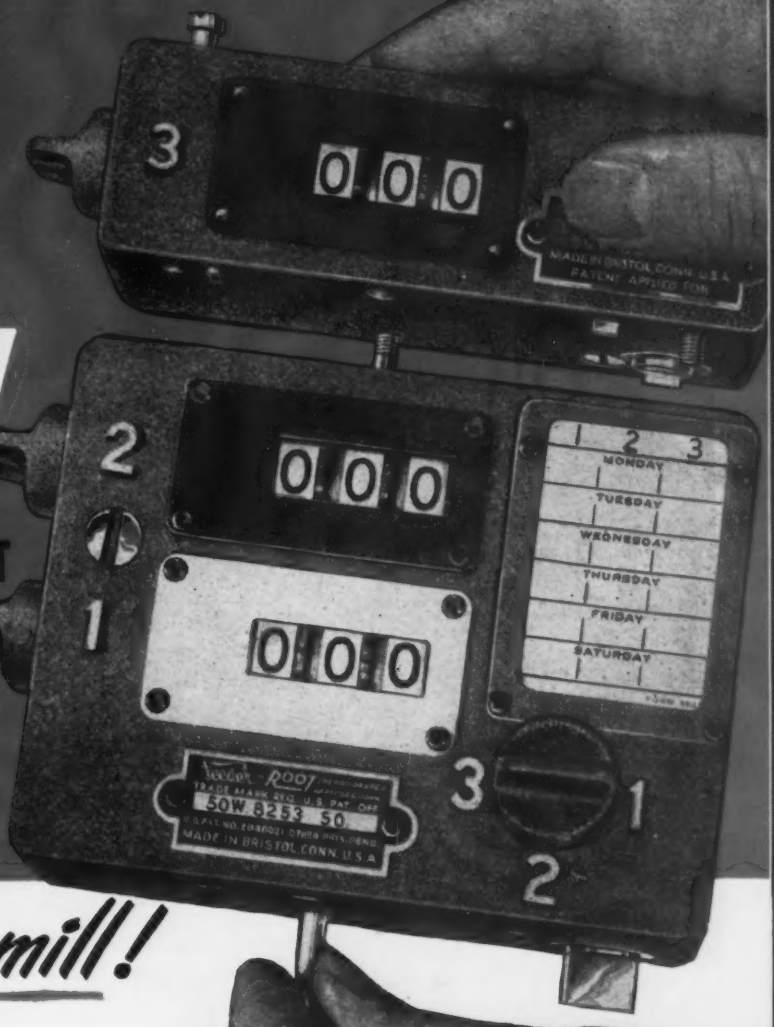


THE AMERICAN MONORAIL COMPANY

13108 ATHENS AVENUE **CLEVELAND 7, OHIO**

Veeder-Root Vantage-Points

QUICK Convertibility FROM 2 TO 3 SHIFT OPERATION



...right in your own mill!

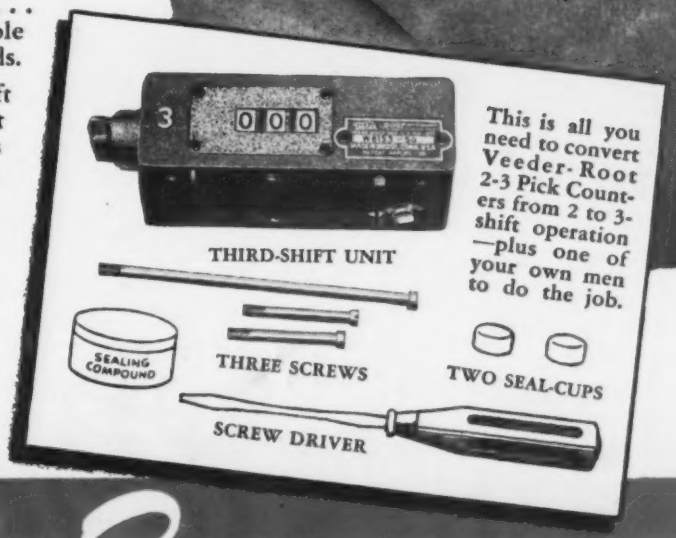
HERE'S HOW EASY IT IS:

1. Remove 2 seals and oiler . . . then just attach the 3rd-Shift Counting Unit to the top of the 2-Shift 2-3 Pick Counter (as shown), with the three brass screws furnished.

2. Tighten the screws with a screwdriver . . . replace seals and oiler. *And the job is done!*

Your own men can do this job . . . *in your own mill* . . . in a few minutes per counter. There's no appreciable disruption of production . . . or of production records.

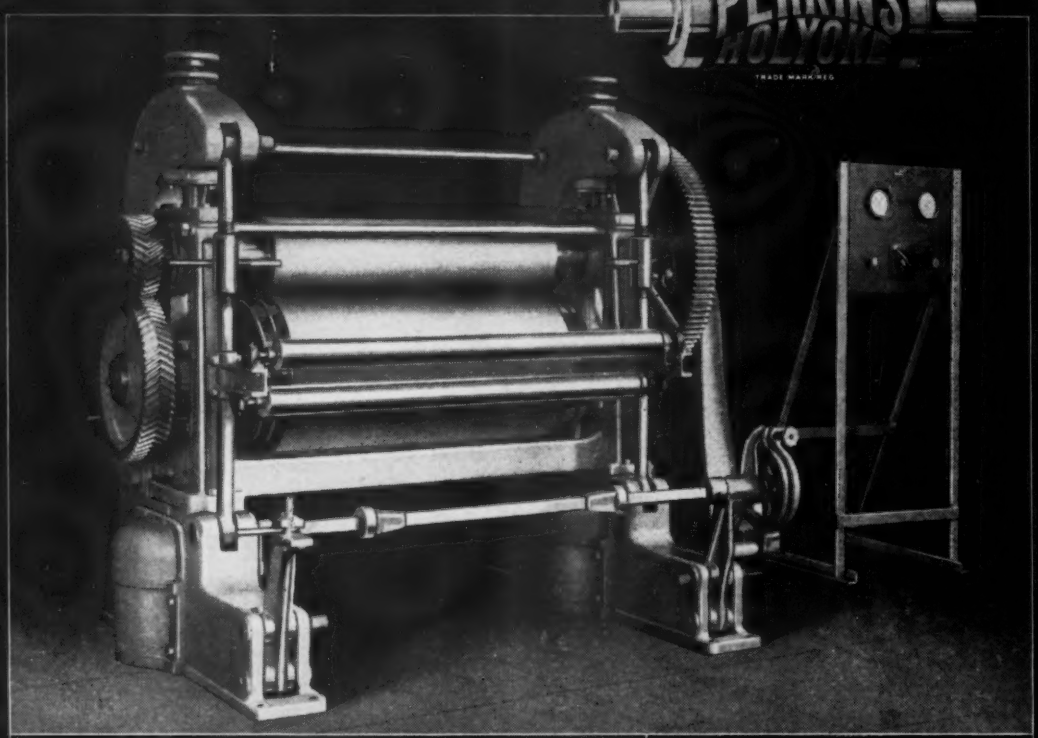
What's more, you don't have to buy these 3rd-Shift Counting Units *until you convert* from 2 to 3-shift operation. This quick, money-saving convertibility is one of the many exclusive features of Veeder-Root 2-3 Pick Counters. Watch this space for other important features to follow. And get in touch with your Veeder-Root Field Engineer on *all* your current counter needs . . . for looms, frames, and all other types of textile machinery.

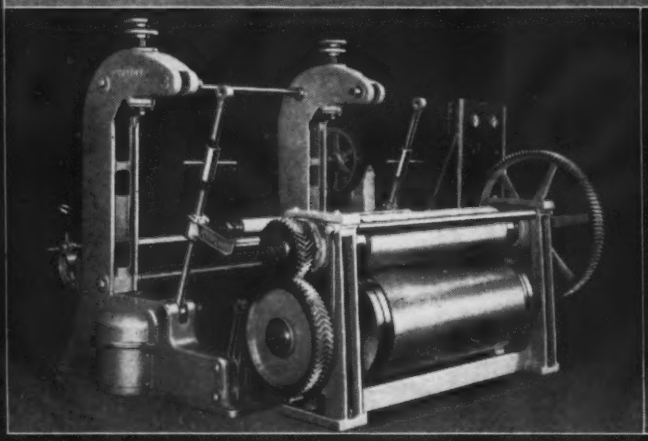

3
0 0 0
THIRD-SHIFT UNIT
This is all you need to convert Veeder-Root 2-3 Pick Counters from 2 to 3-shift operation—plus one of your own men to do the job.
SEALING COMPOUND
THREE SCREWS
TWO SEAL-CUPS
SCREW DRIVER

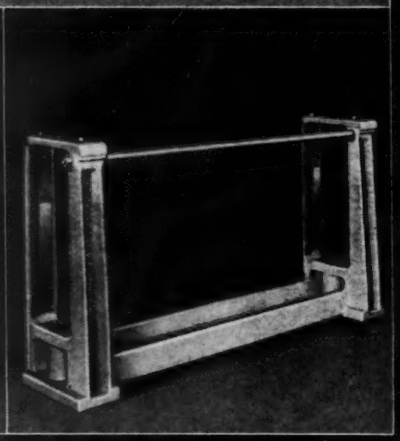
VEEDER-ROOT INC., HARTFORD 2, CONN.

OFFICES IN: Boston, Chicago, Cincinnati, Cleveland, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, St. Louis, San Francisco, Montreal, Buenos Aires, Montevideo, Mexico City. *In England:* Veeder-Root Ltd., Dickinson Works, 20 Purley Way, Croydon, Surrey. *In Canada:* Veeder-Root of Canada, Ltd., Montreal.

VEEDER-ROOT 2-3 PICK COUNTERS





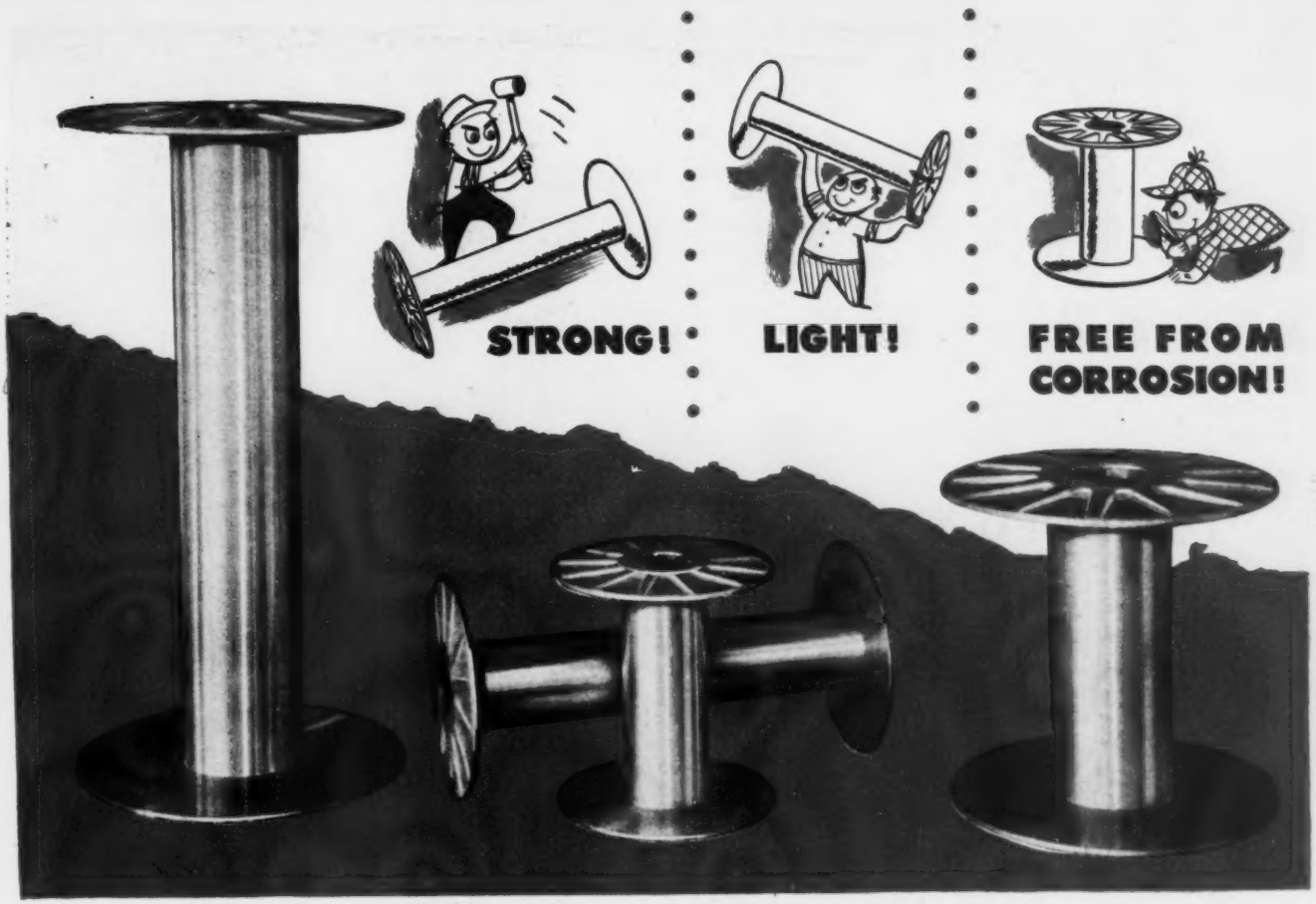


EVERY PERKINS CALENDER is custom-made to meet local conditions, engineered for marked effectiveness, convenience, simplicity. For example, this two-roll 46" embossing calender shown with subframe and subframe removed. Foxboro air-pressure system. Rolls mounted in Timken anti-friction bearings. Helical roll connecting gears. There is no substitute for PERKINS quality.

B. F. PERKINS & SON, Inc.

HOLYOKE, MASS., U.S.A.

LARGEST MANUFACTURERS OF CALENDER ROLLS IN THE WORLD



Only aluminum fills all 3 requirements . . .

EVEN AT HIGHEST WARPING SPEEDS Aluminum Tricot Beams run true and vibrationless . . . stop and start quickly, smoothly. That's because aluminum beams are *precision-built* and *precision-balanced*. And their extremely *lightweight* means low shipping costs . . . easier, faster handling.

You can fill an aluminum tricot beam with any kind of yarn—even synthetics of finest deniers. The inherent *strength* and *stiffness* of aluminum reduces the elastic deflection of flanges to the vanishing point.

Maintenance of aluminum tricot beams is simple . . . the smooth, bright finish of the aluminum machined flanges keeps its polish indefinitely . . . stays free from the corrosion products that roughen the surface and snag yarn.

You can get Aluminum Tricot Warp Beams now from several responsible manufacturers. We'll gladly send you their names upon request. Aluminum Warp Beams, designed in co-operation with Reynolds Textile Engineers and built of Reynolds Aluminum, completely fulfil the exacting requirements of the textile industry.

For answers to any of your questions on aluminum tricot beams, section beams, as well as on spools and bobbins of all sizes and types, please write Reynolds Metals Company, Textile Sales Division, 2535 South Third Street, Louisville 1, Kentucky.

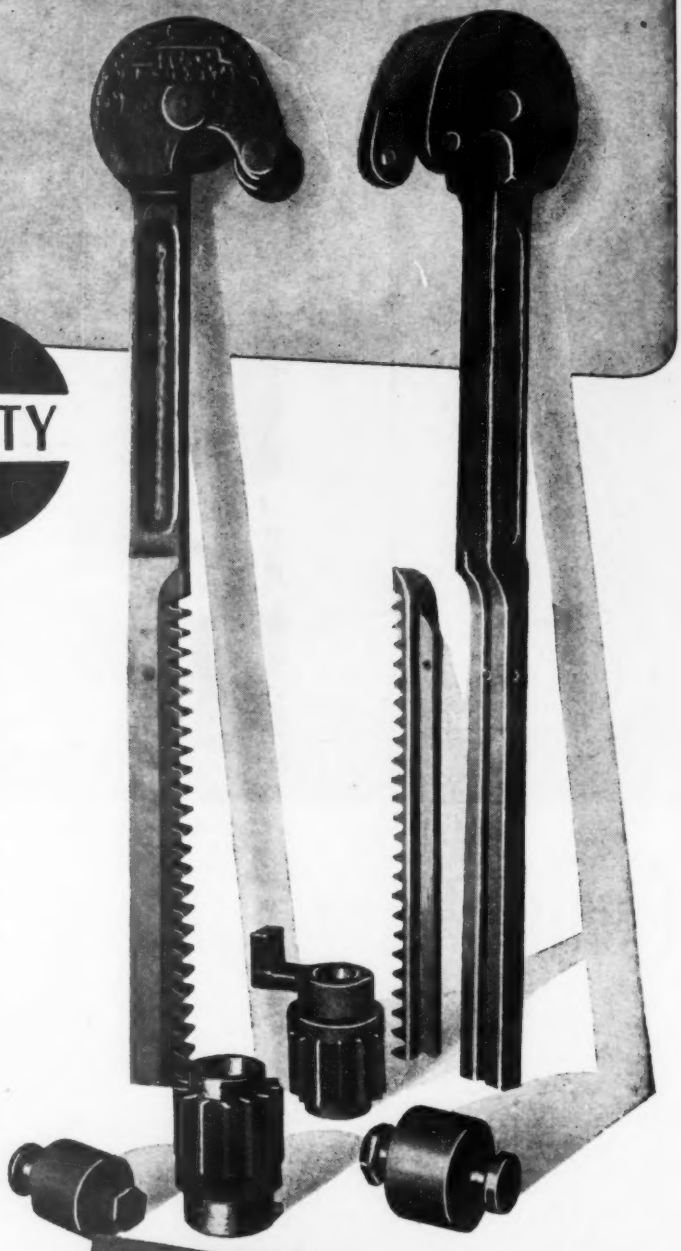
Other applications where strong, light, rustproof Reynolds Aluminum does a better job for the textile industry . . . and for you!

- **Ring Rails**
- **Needle Bars**
- **Doffing Trucks**
- **Separator Blades**
- **Knitting Machines**
- **Stocking Forms**
- **Picker Sticks, Shuttles**
- **Spinning and Roving Frames**
- **Cloth Rolls and Stock Shells**
- **Slasher hoods, exhaust equipment, ventilator ducts.**

REYNOLDS METALS

REYNOLDS ALUMINUM

STEEL CALENDER RACKS



DESIGNED FOR SAFETY AND LONG LIFE

For safety in operation, the tongue and grooved cut-steel gear rack and rack section of this patented calender rack are firmly fastened in place with a 3/16" soft-stock shear pin set in hardened tool-steel bushings.

With the exception of the cast iron side plates on the head, the entire rack assembly is constructed of steel for hard wear and long life. One assembly, installed 10 years ago, has required only 85c for repairs.

The rack head is equipped with hardened steel ball bearing rollers and hardened steel pins. Furnished complete with cut-steel pinion rack gears.

for KITSON, SACO-LOWELL, ATHERTON, HOWARD-BULLOUGH, DOBSON & BARLOW and POTTER & JOHNSON pickers

WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA

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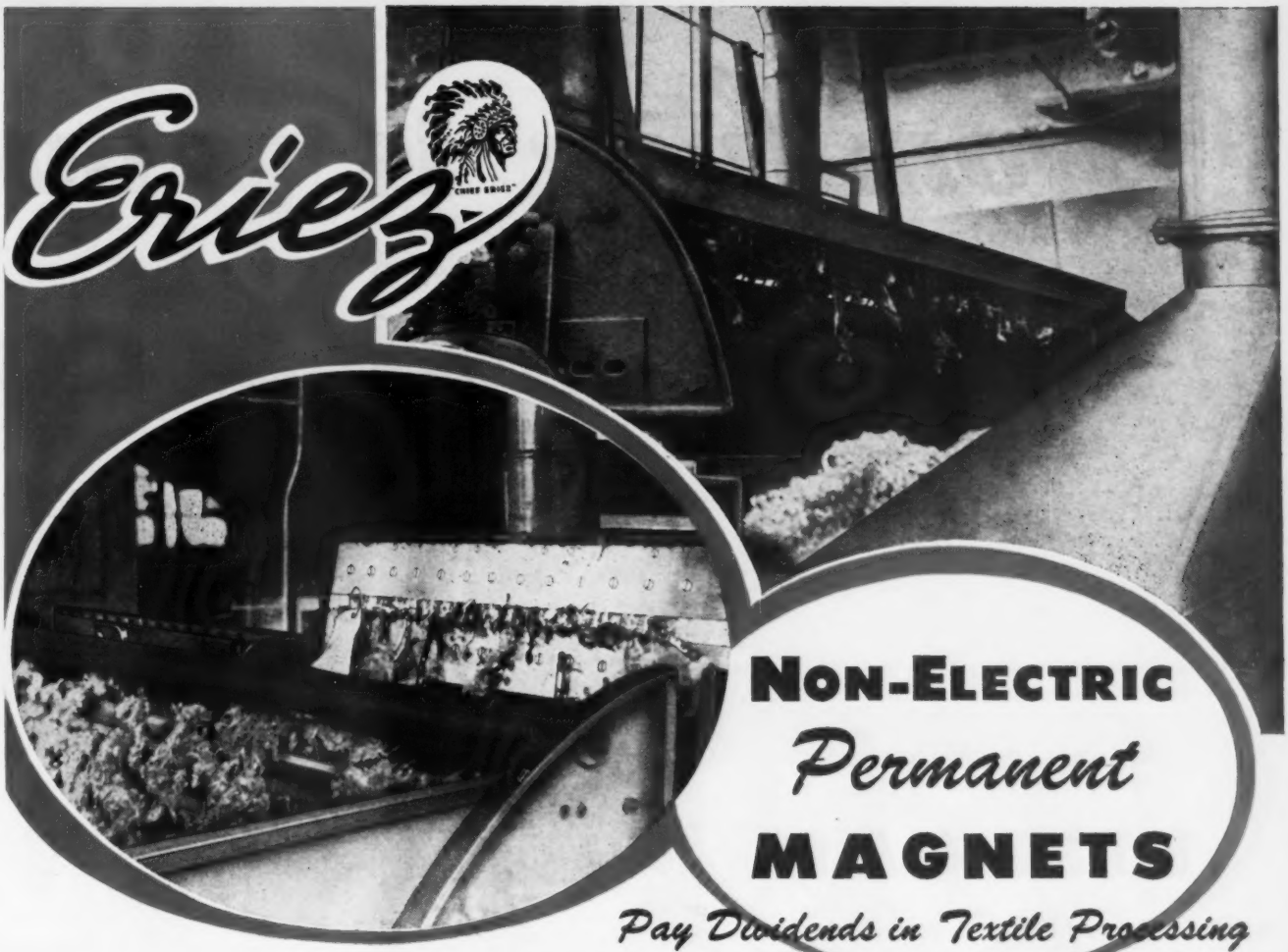
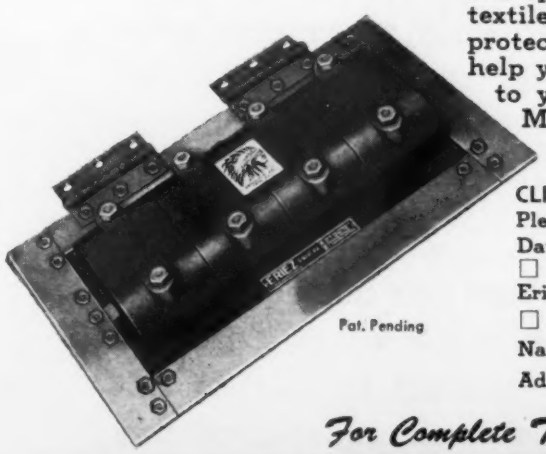


NON-ELECTRIC *Permanent* MAGNETS

Pay Dividends in Textile Processing

HERE is an Eriez installation above the spiked apron of a feeder in the Brooklyn, N. Y., plant of The Englander Company, removing from the materials which go into the Englander Mattress, **any** and **all** pieces of tramp iron or steel. The surprisingly low first cost of an Eriez Non-Electric Permanent Magnetic installation is its last cost . . . No current, no gadgets, no failures in maintaining maximum pulling power **all the time.** Eriez Magnets are Permanently Magnetized. There are handsome dividends being recorded from the operation charts on Eriez Magnetic Protection in leading textile mills all over the United States. Place your magnetic protection requirements before Eriez engineers . . . they can help you . . . Their experience can give you the best solution to your problems. Bulletin 104 tells you more about Eriez Magnets.



Pat. Pending

CLIP AND MAIL TODAY

Please send bulletin No. 104 and the following: TW-5

Data on Eriez Magnets for:

☐ Wool ☐ Cotton ☐ Worsted ☐ Other processing lines

Eriez data on: ☐ Gravity Conveyor ☐ Mechanical Conveyor

☐ Pneumatic Conveyor ☐ Equipment on Processing Machines

Name.....

Address..... City..... State.....

For Complete Textile Magnetic Protection . . . See Eriez First

Eriez Jumbo Magnets are available for the Toughest Separation Job.

Eriez EAR' EEZ

ERIEZ MANUFACTURING CO.

501 EAST 12th ST. ERIE, PENNA.

Houghton is proud

greatest dollar

in a warp size

HOUGHTO

The story behind HOUGHTO-SIZE CW

With drastic shortages of so many basic materials needed for textile processing, the problem of supplying former types of sizing compounds has been growing more and more acute. But Houghton, seeing it coming two years ago, started then to develop and prove in production a warp size softener which would not only overcome that situation, but which would also have other outstanding advantages.

How well that objective has been met can be seen from a study of the merits set forth on the opposite page. Here is another Houghton "first"—a unit product combining softener, binder and plasticizer, which mill experience has proved outstanding in performance and low in cost. *From every standpoint the new* HOUGHTO-SIZE CW *excels!*

TEXTILE PROCESSING PRODUCTS

E. F.

to announce the

value ever offered

compound

SIZE CW

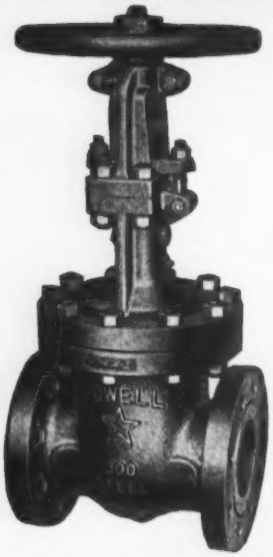
These proven merits have been firmly established in mills using this new sizing compound for cotton and staple blends of warps:

1. A one-piece size—nothing to add except starch and water.
2. Available in all quantities without restriction.
3. Contains 90% active ingredients.
4. Gives an all-time low kettle cost.
5. A free-running warp possessing high breaking strength.
6. Slick, waxy coating on surface of warps.
7. No sticking to dry-cans.
8. Increases weave-room efficiency—*as much as 1½%!*

For new descriptive folder, write to E. F. Houghton & Co., 303 West Lehigh Avenue, Philadelphia 33, Pennsylvania, or 1301-05 West Morehead Street, Charlotte, N. C.

F. HOUGHTON & CO. PHILADELPHIA CHARLOTTE

depends on *perfect* control.



Class 300-pound Cast Steel Gate Valve with bolted flanged yoke, outside screw rising stem and taper wedge solid disc. Powell Cast Steel Valves of all types are available in pressure classes from 150 to 2500 pounds, inclusive.

Large Iron Body Bronze Mounted Gate Valve for 125 pounds W.S.P. made in sizes 2" to 30", incl. Has flanged ends, outside screw rising stem, bolted flanged yoke and taper wedge solid disc. Taper wedge double discs can be provided in sizes 2" to 12", incl. Also available in All Iron for process lines.

Small size 200-pound Bronze Globe Valve for steam, water, oil or gas. For assured, long-life performance, it has a renewable, specially heat treated stainless steel seat and regrindable, renewable, wear-resisting "Powellium" nickel-bronze, plug type disc.

The performance of an orchestra depends on the control exercised by the conductor. Without this control, the greatest aggregation of musicians in the world would make a sorry mess of the finest symphony.

Likewise, the smooth performance of an industrial plant depends on the valves which control the media necessary to its operation. And for perfect performance in flow control, the valves must be adapted in every way to the conditions under which they operate.

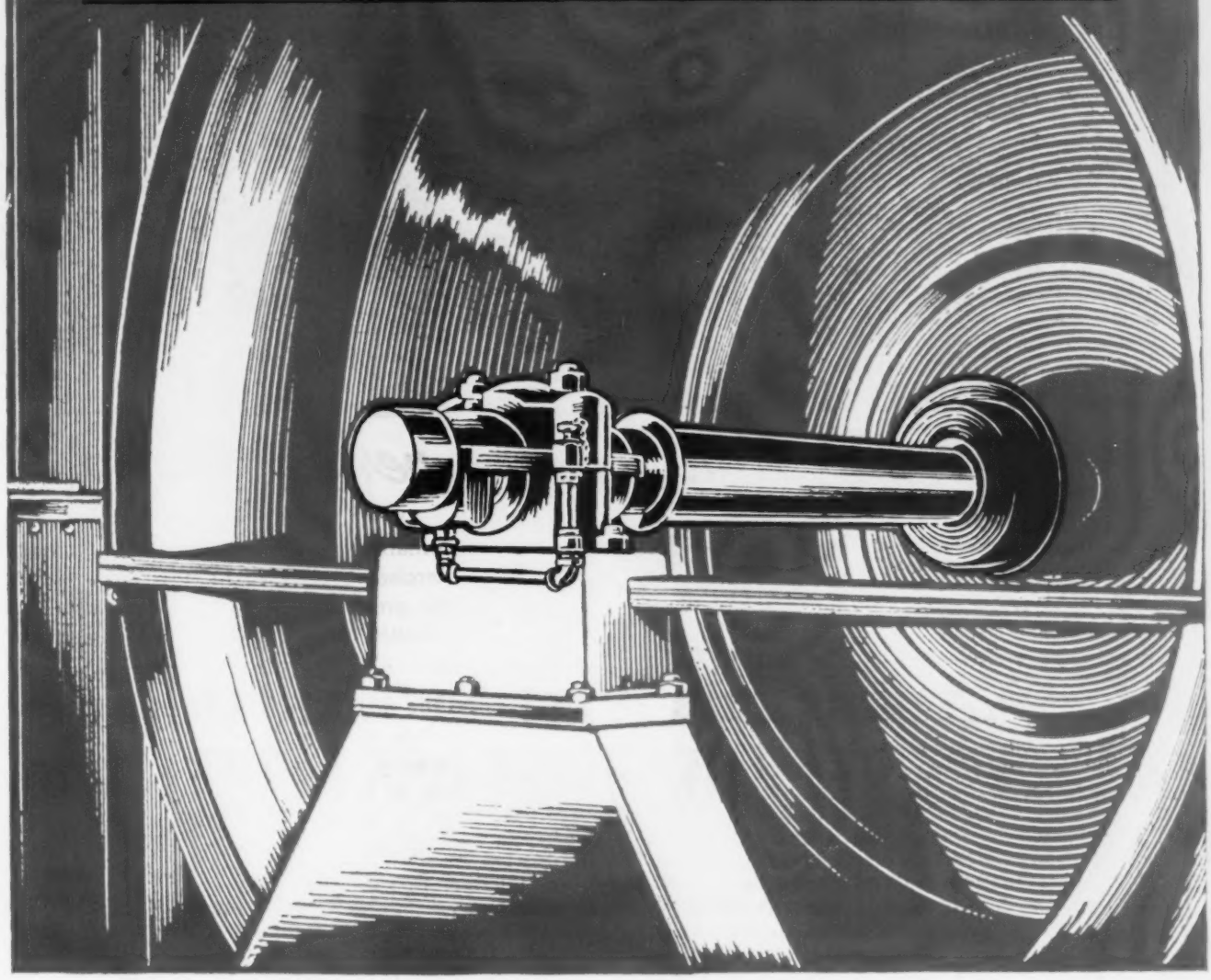
For more than a century, Powell Engineers have been designing valves to meet every new flow control condition as it has arisen.

Today there's a Powell Valve, in Bronze, Iron, or Cast Steel, for every known requirement of Industry. And to meet the demands of the Chemical and Process Industries for corrosion-resistant valves, Powell makes a complete line, including many special designs, in the widest range of pure metals and alloys ever used in making valves.

The Wm. Powell Company
Cincinnati 22, Ohio
DISTRIBUTORS AND STOCKS IN ALL PRINCIPAL CITIES

POWELL VALVES

"BEARINGS RUN 10% COOLER



since changing to Tycol industrial greases

TYCOL
INDUSTRIAL LUBRICANTS

Boston • Charlotte, N. C.
Pittsburgh • Philadelphia

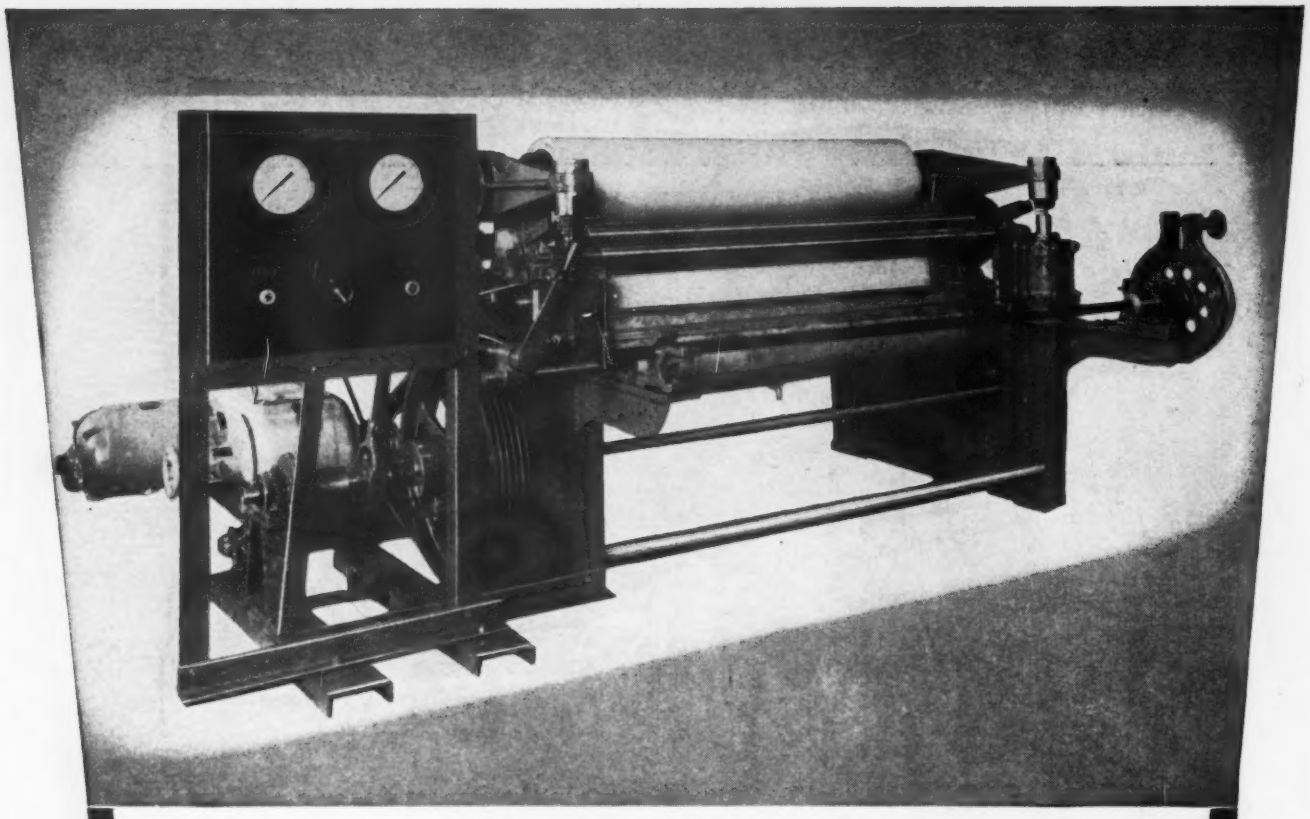
TIDE WATER ASSOCIATED OIL COMPANY
17 BATTERY PLACE · NEW YORK 4, N. Y.

"Production speeded 65%...
Repair costs slashed 30%...
Deposits eliminated...
Highly stable...
Consumption cut 25%..."

This report from a plant engineer typifies the kind of trouble-free, cost-cutting lubrication provided by Tycol Industrial greases. They contain more high-grade cylinder oil—less soap—which means better performance in every application.

For aid in the selection of Tycol greases best suited for your particular needs, contact your nearest Tide Water Associated office today.

LUBRICATION—"ENGINEERED TO FIT THE JOB"



● *Built by WERNER MACHINE CO., INC.*

PADDERS ARE WELL PROTECTED WHEN THE BEARINGS ARE RIGHT

Equipped with SKF Spherical Roller Bearings on rubber-covered rolls and SKF Deep-Groove Ball Bearings on idler rolls, this Ten-Ton, Two-Roll Pneumatic Padder is well protected against bearing trouble. The ***roller*** bearings have the stamina needed to carry the heavy loads . . . provide rolling alignment that assures proper roll positioning. The ***ball*** bearings carry radial and thrust loads in any direction . . . make certain of smooth, carefree rolling. When ***you*** buy bearings from SKF, you can order either ***ball*** or ***roller*** bearings—or both. Made in every size and type that Industry needs, SKF Ball and Roller Bearings prove to be the right bearings for the right places. 6257

SKF INDUSTRIES, INC.
PHILADELPHIA 32, PA.

"Like moving your plant outdoors"

It took a lighting engineer to put into words the "lift" your workers will get from a clean, fresh coat of white paint on the ceilings and walls of your plant. Said he, in describing a job recently done in one plant with Barreled Sunlight:

"It's like moving your plant outdoors!"

He's right, too—for white ceilings and walls create an "indoor sky" which reflects and diffuses the light from your fixtures exactly as the sky reflects and diffuses natural sunlight.

This means greater lighting efficiency, *for white paint reflects far more light (80 to 90%) than paint of any other color.* And it means better seeing — the answer to greater productivity—because by distributing the light evenly it helps banish the glare, harsh shadows and extreme brightness contrasts which make seeing difficult.

But "any old white" won't do. If painting is to be a *sound investment* the white you buy must be easy to apply on large areas, give you good "yardage" without loss of hiding power and *remain* white for the longest possible time. That's why for years so many of America's leading plants have standardized on BARRELED SUNLIGHT.

U. S. GUTTA PERCHA PAINT COMPANY
20E Dudley Street, Providence 1, R. I.

I'd like to know more about the partnership of Light and Paint. Please send me your free 32-page booklet, "Light and Color in the Work-World."

COMPANY .....

STREET AND NUMBER .....

CITY ..... ZONE ..... STATE .....

MY NAME IS .....

MY TITLE .....

© 1947 U. S. Gutta Percha Paint Company

keep machines in condition with conditioned air

High speed alone is no guarantee of increased production from knitting machines. If the temperature is allowed to vary, machines get out of adjustment and "crashes" are frequent. Time is lost while adjustments are made and production is reduced.

The remedy is the right kind of air conditioning—the Carrier kind. A Carrier system provides accurate control of temperature the year round. It controls humidity, too, and keeps air clean . . . not only in the knitting room but throughout any textile mill. It keeps the close clearances of modern machines in perfect adjustment . . . permits yarn to be handled at higher speeds without costly shut-downs.

Air conditioning by Carrier cuts costs in other ways. It prevents soilage from air-borne soot and dirt, helps reduce flaws and seconds. It's the simple, economical way to produce more and better goods.

In its work for textile mills, Carrier draws on 45 years' experience. Its engineers work closely with textile men . . . boosting production and improving quality with modern air conditioning. They're always glad to help you in finding ways to smooth out production wrinkles. Carrier Corporation, Syracuse, New York.

Carrier

air conditioning

refrigeration

industrial heating

What's she got that I haven't got?

It's the plus of Johnson's DRAX*

*Trademark Reg. U. S. Pat. Off.

— a protective wax finish for all woolens, cottons, linens, rayons and mixtures.

DRAX improves the hand and drape of nearly all fabrics

DRAX protects the freshness of all types of fabrics

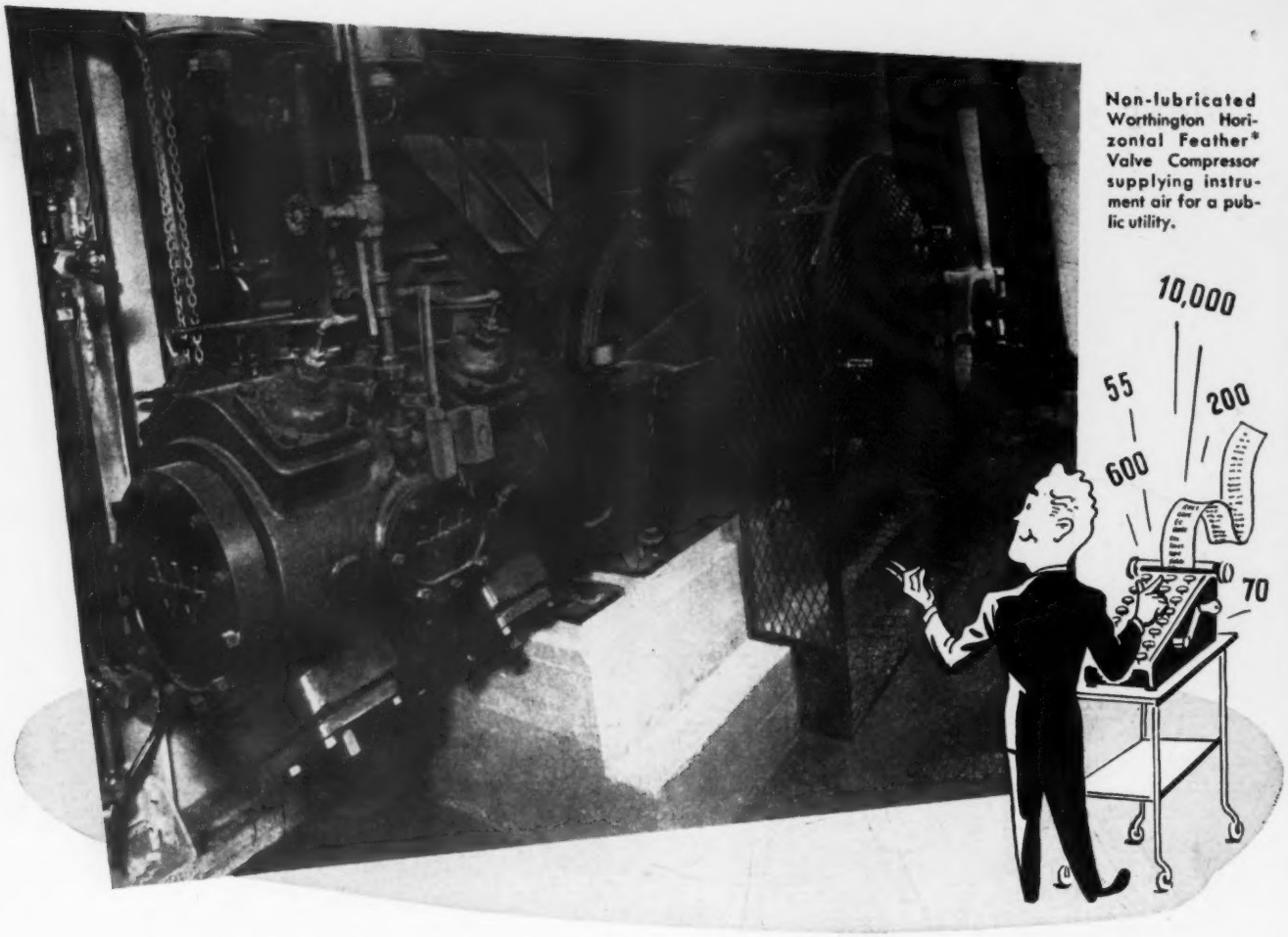
DRAX safeguards fabrics against soiling and many stains

DRAX increases resistance of fabrics to wear

DRAX is being applied successfully in padders, jigs, dolly washers, mangles, size boxes, dye reels, quetches, dye becks, dye kettles, package dye machines. Remains completely stable during storage. May be applied at temperatures from 70° to 200° F.

DRAX *has been developed for the Textile Industry by the makers of Johnson's Wax. For complete technical information about DRAX — write to* **S. C. JOHNSON & SON, Inc.**

Fabric Finishes Division, Racine, Wisconsin



Non-lubricated Worthington Horizontal Feather* Valve Compressor supplying instrument air for a public utility.

Piston Displacement

UP TO 1,044,367,200 C. F. Y.

(1,047,228,480 Cu. Ft. Each Leap Year)

Maybe it's a bit on the optimistic side to claim that a Worthington Single Horizontal Compressor, Type HB, will keep going 24 hours a day, 365 days a year. But, the more you look into this line of 29 rugged machines (ranging in size from 5" x 5" to 26" x 13"), the more clearly you'll see that everything about them adds up to continuous, heavy-duty operation . . . year after year.

WRITE FOR BULLETIN L-640-B1A

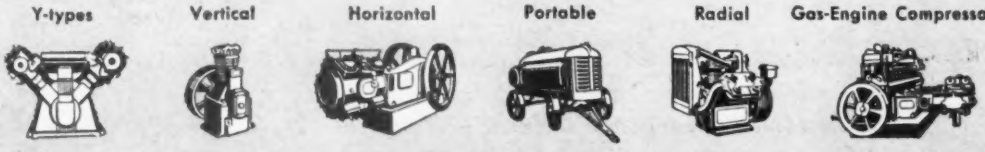
If getting low-cost air is your responsibility, you'll want to look into the 24 pages of this bulletin. Write for it today and learn why — in compressors, as in so much other equipment — *there's more worth in Worthington. Worthington Pump and Machinery Corporation, Compressor Division, Buffalo, New York.*

*Reg. U.S. Pat. Off.

WORTHINGTON

K7.4

NO OTHER COMPRESSOR WILL OUTPERFORM A WORTHINGTON



SPRINGFIELD
REG. U.S. PAT. OFF.
Blankets
VIRGIN WOOL

RAW

Fresh Spring Beauty . . .
Deep-napped Comfort

PLANNED by Springfield Stylists . . ACHIEVED with the aid of Fybrol 1115*

All the way from carding to finishing . . . the use of FYBROL 1115—the original water-soluble wool oil—contributes to more efficient yarn production and better quality of finished product. The "Buttercup" virgin wool blanket illustrated exemplifies the fine styling and craftsmanship of the Springfield Woolen Mills Co. and is an outstanding example of better finished products made with the aid of FYBROL 1115.

*Patents Pending

FYBROL 1115 is standard in mill after mill where finer finished goods attest to its remarkable qualities for meeting the most exacting requirements in wool processing.

For better all-around mill efficiency and maximum sales appeal in your finished product, do as Springfield Woolen does . . . *standardize on FYBROL 1115.* It's easier to use, more economical. Let us demonstrate how FYBROL 1115 can help you get better results in wool processing.

Sonneborn Processing Specialties for the Textile Industries

Wool and Worsted Oils • Petroleum Sulfonates • Detergents and Dyeing Oils • Penetrants • Delustering Specialties • Warp Dressings • Finishing Sizes and Softeners • Water Repellents • Sulfonated Oils • Wetting and Rewetting Agents

Textile Chemicals Division

L. SONNEBORN SONS, INC.

Dept. W5, 88 Lexington Avenue
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Plant and Laboratories: Nutley, N. J.
Refineries: Petrolia and Franklin, Pa.

KOHORN

FILAMENT RAYON and STAPLE FIBER PLANTS and MACHINERY

IN POST-WAR RAYON PLANT INSTALLATIONS THE KOHORN RECORD SPEAKS FOR ITSELF

5 Rayon Plants

4 Staple Fibre Plants

Combined Output

more than

50 million pounds per year

PERU—Buildings commenced the beginning of 1945. Production started October 1946.

BRAZIL—Buildings commenced the end of 1945. Production scheduled for the middle of 1947.

CHILE—Buildings commenced the end of 1946. Production scheduled for the beginning of 1948.

EGYPT—Buildings commenced the beginning of 1946. Production scheduled for the middle of 1947.

CZECHOSLOVAKIA — Buildings completed. Production scheduled for the middle of 1947.

This is the largest share of rayon plant construction in progress today. Lower cost, fast construction and guaranteed performance are the features of Kohorn rayon plants. For information on establishing filament rayon and staple fiber plants, and for improved rayon machinery consult Kohorn in confidence without obligation.

OSCAR KOHORN & CO., Ltd.

PIONEERS OF THE RAYON INDUSTRY

501 FIFTH AVE. NEW YORK

STAINLESS

ask EASTERN

REMOVING LUBRICANTS? Will vapor degreasing with perchlorethylene remove sulfurized cutting oils used in drilling holes in ES 18-8 (Type 302) switch plates?

GRIME FROM EXPOSURE? What is the best method of cleaning soot and grime from polished stainless steel without scratching the finish?

LEAD SOAPS? We use a lead soap lubricant in forming stainless plate, but it is difficult to remove. Is there a good solvent for these soaps?

DISCOLORATIONS? Light rust spots have formed on some of our equipment we used to clean with steel wool. Can you suggest a cleaning agent?

COOKING STAINS? Can we use one of the new detergent soaps on our stainless steel kitchen equipment to clean up food stains, without affecting the high polish?

ask

EASTERN for the

answer when

STAINLESS is the

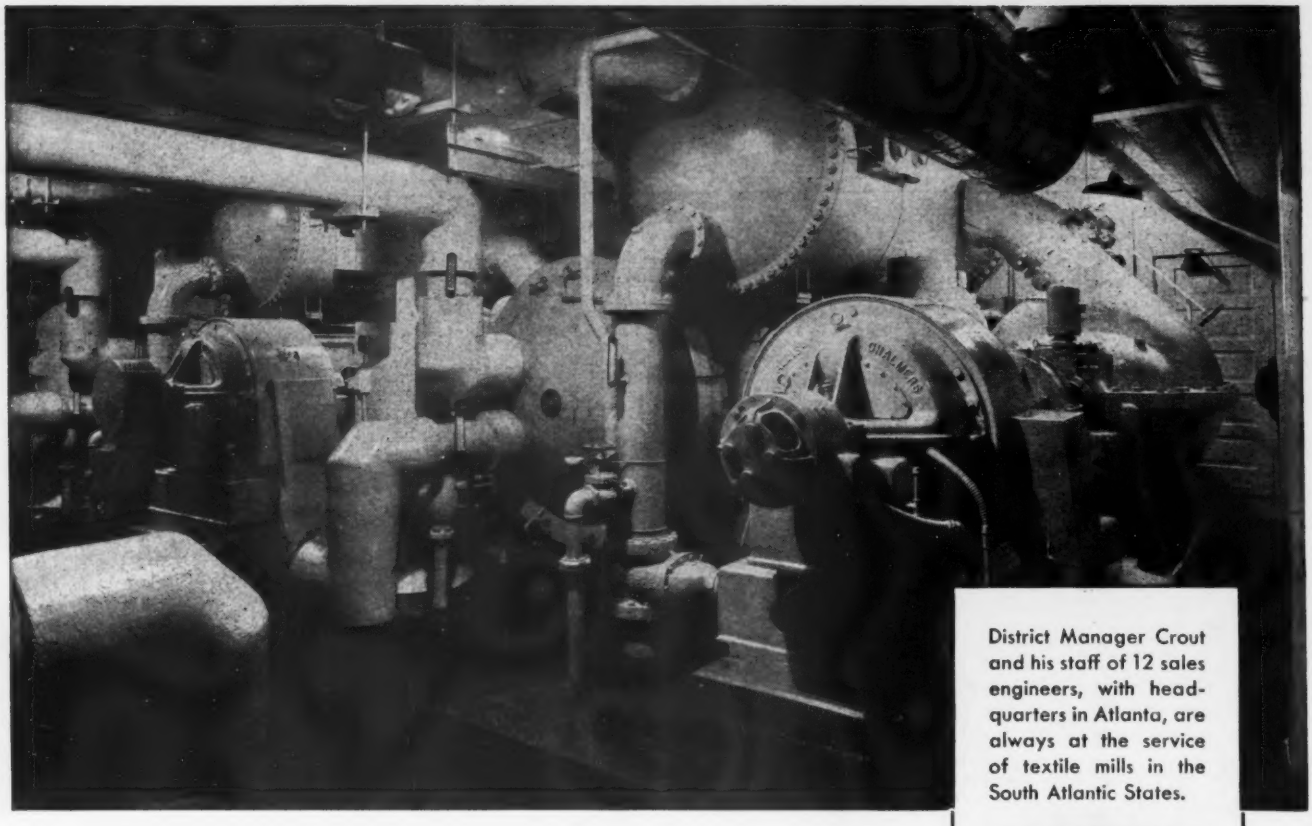
question

To keep stainless steel really stainless, keep it clean. And for methods of cleaning it quickest and best, ask Eastern. Problems like this are answered every day by Eastern Stainless' technical men. Many of the answers are given in the data-packed handbook, "Eastern Stainless Steel Sheets". Write for your copy, and when you need further help, get in touch with our nearest office or distributor. JMLCo E-D1

EASTERN STAINLESS STEEL CORPORATION
BALTIMORE 3, MARYLAND

ES

EASTERN STAINLESS



District Manager Crout and his staff of 12 sales engineers, with headquarters in Atlanta, are always at the service of textile mills in the South Atlantic States.

Air Conditioning
is no mail-order purchase

When you embark on air conditioning and humidity control for your mill, you don't expect to send the order on a post card . . . or to "pay the postman" when the machinery arrives.

You have a right to expect more than if you'd filled in a coupon from one of those "send no money" ads—a right to expect that the product you are purchasing is backed up by a trained staff of the manufacturer's engineers right in your own neighborhood.

The York engineers in your area are men of long training and wide experience. They know their product and its application to your installation. They are ready and available *right now* to assist mill owners and their consultants and installing contractors.

And since they have the exceptional range of York equipment from which to select, you can be certain of the right unit for the right place, whatever the type or capacity required, no matter how large or how small.

Remember too, that after your job is completed and accepted, these York engineers stay right there in your district, attached to the local York office near you . . . your assurance of efficient maintenance and prompt service.

York Corporation, York, Pennsylvania.

M. M. CROUT
District Manager

Assisted by:
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YORK *Refrigeration and Air Conditioning*

HEADQUARTERS FOR MECHANICAL COOLING SINCE 1885

MEET US IN NEW YORK

AT THE INTERNATIONAL EXPOSITION OF TEXTILES

It will be held at Grand Central Palace, New York, during the week of June 2nd to 7th, inclusive. If you are interested in processing and finishing equipment for broad goods you will want to talk to our engineers. Two Van Vlaanderen machines will be on display.

VAN VLAANDEREN MACHINE COMPANY

370 Straight Street, Paterson, 3, New Jersey **Cable Address, VLAANDEREN, PATERSONNJ, U. S. A.**

World's largest manufacturer of machinery for processing modern fabrics

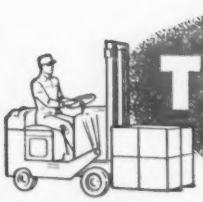
How to Fatten Up Lean Profit Margins

WHATEVER YOUR PRODUCT, handling is an added cost that reduces the margin of profit . . . and the cost of handling is determined by the method of handling.

Modern handling methods mean lower handling costs—and elimination of production delays, reduced accident rates and less product damage. Modern handling methods call for Towmotor Fork Lift Trucks and Accessories—designed for fast, systematic movement of materials and products in receiving, processing, storage and distribution.

Like to fatten up those lean profit margins? You can . . . a Pocket Catalog will show you how Towmotor can help. Towmotor Corporation, Division 22, 1226 East 152nd Street, Cleveland 10, Ohio.

SEND FOR SPECIAL BULLETINS DESCRIBING THE **TOWMOTOR** REVOLVING CARRIAGE • SIDE SHIFTER UNLOADER • UPENDER • SCOOP • CRANE ARM • EXTENSION FORKS • EXTENSION BACKREST • RAM • OVERHEAD GUARD



TOWMOTOR *THE ONE-MAN-GANG*

FORK LIFT TRUCKS *and* TRACTORS

RECEIVING • PROCESSING • STORAGE • DISTRIBUTION

When you "go gunning" for high costs...

set your sights on FRICTION!

Let a GULF LUBRICATION ENGINEER help you find opportunities for dollar savings in your mill

EVERY year friction puts its hand in U. S. industry's pocket to the tune of two billion dollars—for repairs, lost production time, and reduced plant efficiency.

To reduce the "take" of friction in your mill, make sure that each moving part in every producing unit is scientifically lubricated.

Here a Gulf Lubrication Engineer can give you valuable assistance. He will accurately determine your specific lubrication requirements, then cooperate with your operating and maintenance personnel to install the most efficient lubrication practice. Result: less wear, fewer production lags, improved equipment performance and lower maintenance costs.

The helpful counsel of a Gulf Lubrication Engineer—and the complete Gulf line of more than 400 quality lubricants — are available to you through 1200 warehouses located in 30 states from Maine to New Mexico. Write, wire, or phone your nearest Gulf office today.

Gulf Oil Corporation · Gulf Refining Company

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GULF INDUSTRIAL LUBRICATION

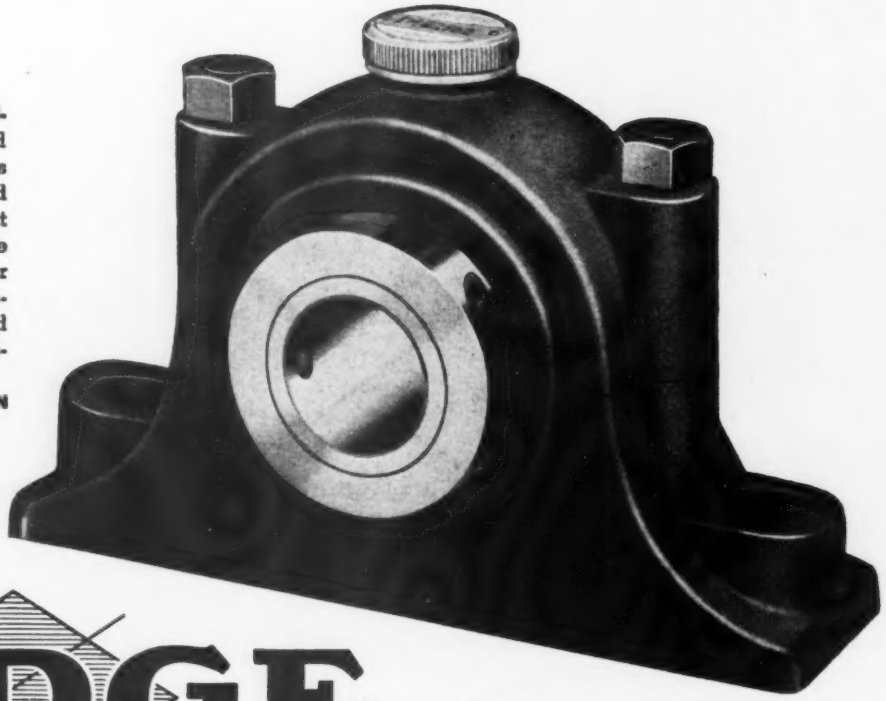
DODGE
TIMKEN

These Two Names

ON ANTI-FRICTION BEARINGS ARE YOUR ASSURANCE OF *QUALITY, DEPENDABILITY* AND *PERFORMANCE* WHICH ENABLE YOU TO CUT COSTS AND INCREASE PRODUCTION

Dodge-Timken Double Interlock Pillow Block. Dodge mounts, seals and houses the bearing assembly, delivers the pillow block fully assembled ready to lock on the shaft and run at full speed and full load. This is one of the famous Dodge 30,000 hour line, covering a wide range of industrial bearing requirements, and promptly available from Dodge distributors' stocks.

DODGE MANUFACTURING CORPORATION
Mishawaka, Indiana



DODGE
of Mishawaka, Ind.

CALL THE TRANSMISSIONEER
your local Dodge distributor, for news of latest developments in power transmission equipment. Look for his name in your classified phone book under "Power Transmission Equipment."

Copyright, 1947, Dodge Mfg. Corp.

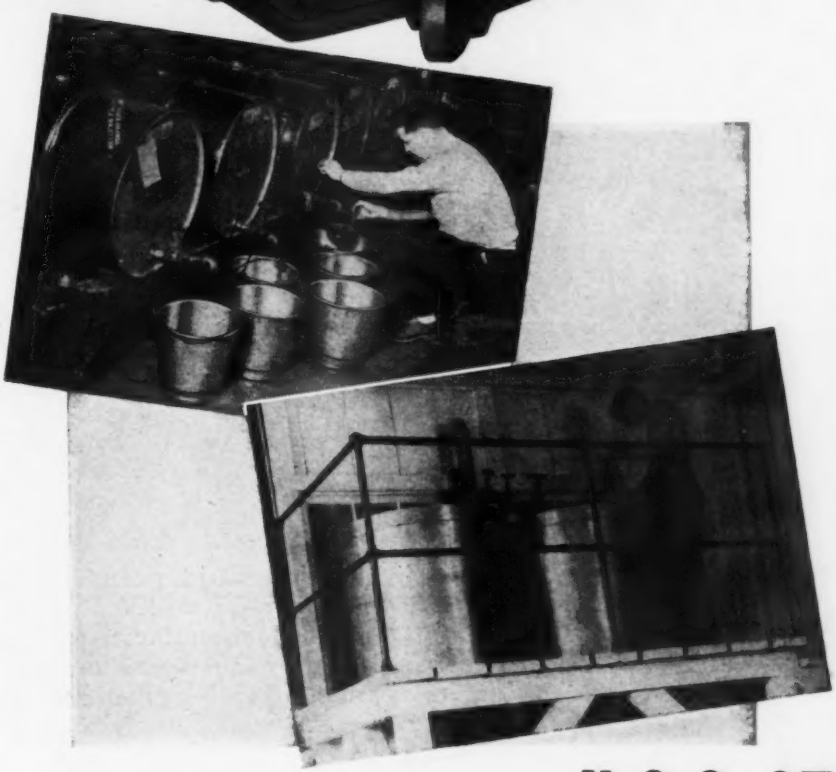
NAME PLATES

FOR YOUR NAME PLATE REQUIREMENTS, WRITE OUR SUBSIDIARY,
ETCHING COMPANY OF AMERICA, 1520 MONTANA STREET, CHICAGO 14, ILLINOIS

FOR PAILS, BUCKETS, TUBS AND TANKS...

nothing equals

Stainless Steel



EVEN in these simple but important dye house appliances, Stainless Steel has proved its outstanding superiority for improving production and lowering costs.

- **It keeps colors truer and brighter.**
- **It makes faster change-overs possible.**
- **It prevents bleeding and contamination.**
- **It drastically reduces cleaning time and labor.**
- **It holds replacement costs to the very minimum.**

In one plant, for example, acid-handling buckets were formerly used up at the rate of 4 to 8 dozen per month. Now, made of Stainless Steel, they last so much longer that replacement costs have been cut 75%.

In dye jigs, acid agers, mixing tanks, etc. the advantages of using Stainless Steel are equally apparent and profitable. A marked increase in over-all plant efficiency has been common experience.

Why not plan now for the gradual replacement of your worn-out and obsolete equipment—with Stainless Steel construction? And if you want to insure the *biggest* return on your investment make it a point to see that it is made of U·S·S Stainless Steel.

This *perfected*, service-tested Stainless is so uniform in composition, in finish and fabricating qualities that it permits the widest latitude in design and allows the use of the most advanced manufacturing techniques. The result—equipment that will deliver the utmost in performance.

LISTEN TO . . . *The Theatre Guild on the Air*, presented every Sunday evening by United States Steel. American Broadcasting Company, coast-to-coast network. Consult your newspaper for time and station.

USS STAINLESS STEEL UNITED STATES STEEL

U·S·S STAINLESS STEEL

AMERICAN STEEL & WIRE COMPANY, *Cleveland, Chicago and New York*
CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago*
COLUMBIA STEEL COMPANY, *San Francisco*
NATIONAL TUBE COMPANY, *Pittsburgh*
TENNESSEE COAL, IRON & RAILROAD COMPANY, *Birmingham*
UNITED STATES STEEL SUPPLY COMPANY, *Chicago, Warehouse Distributors*
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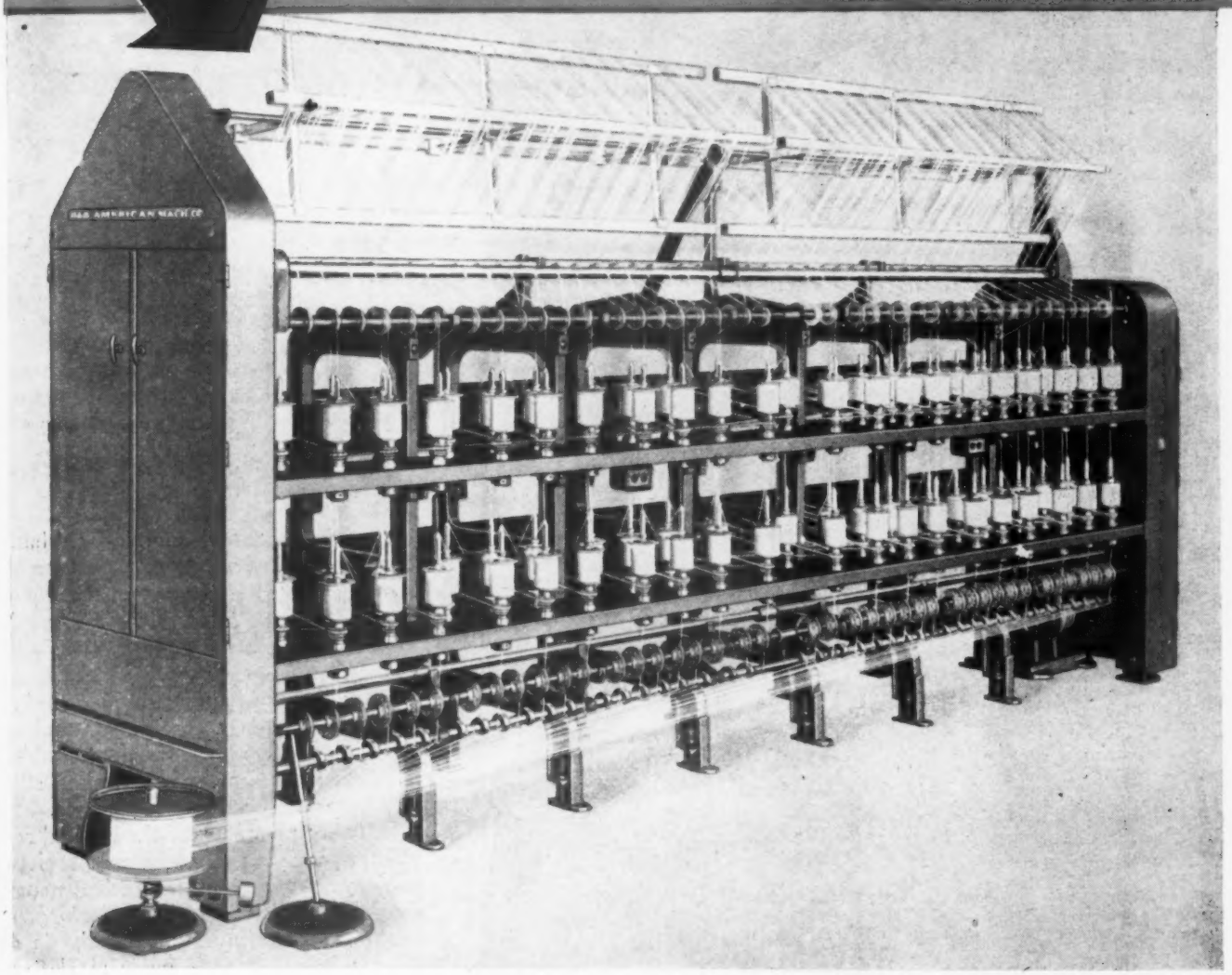
7-576

UNITED STATES STEEL

H & B RUBBER



The H & B Rubber Covering Machine produces covered rubber yarn of accurately measured, fully controlled elongation and perfect balance. Only such yarn can be used, with complete assurance of trouble-free operation, to make bathing suits, foundation garments, hosiery, accessories and other articles of clothing, with the quality that *sells*. To achieve this, the H & B Rubber Covering Machine incorporates a number of exclusive mechanisms, and these are "the little things that make a big difference" in the finished garments.

H & B AMERICAN

Builders of Modern

FACTORY, EXECUTIVE OFFICES AND EXPORT

COVERING MACHINE

IT'S THE LITTLE THINGS *that make a Big Difference*

VARIABLE ELONGATION DRIVE

This variable speed drive—all enclosed in the head end — permits full control of elongation while the machine is running. This feature eliminates stop marks on the finished product and assures a covered rubber yarn that will not vary in stretch characteristics when woven or knitted into the finished garment.

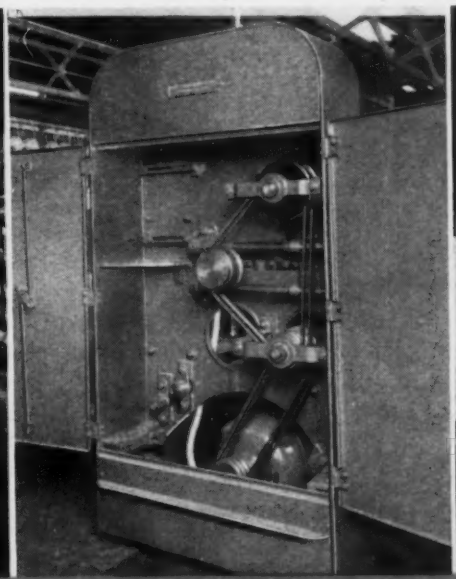
VARIABLE UPPER SPINDLE DRIVE

This variable speed drive—all enclosed in the foot end and adjustable while machine is in operation — assures a perfectly balanced covered rubber yarn. This yarn is free of stop marks, dormant as it is wound on the reels, and thus easily workable in subsequent garment manufacturing.

BALL BEARING SPINDLE

In the newly redesigned high speed spindle we are making use of the grease sealed injection type ball bearing. This prevents talc from entering the bearings and insures a free running spindle that is easily lubricated—one lubrication lasting from 9 to 12 months. Its one piece unit construction with bullet and flyer makes doffing quick and easy.

That's why we say, *"It's the LITTLE things that make a BIG difference."*



Standard High-Speed Light-Covering Spindle Equipped with Adapter, Running Heavy Yarn From Long Traverse Tube.

MACHINE CO.

Textile Machinery

DIVISION PAWTUCKET, RHODE ISLAND, U.S.A.

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ATLANTA, GA.
815 CITIZENS AND SOUTHERN NATIONAL BANK BUILDING

CHARLOTTE, N. C.
1201 JOHNSTON BUILDING

WASHER AND DYE PADDER at The Textileather Corp., Toledo, O., utilizes 91 corrosion resistant Inconel covered rolls. Designed by H. L. Perry, plant engineer, for handling automobile upholstery fabric. Capacity 3320 yards per hour. *Fred Christen & Sons Co.*, Toledo, built this equipment in 1940. Inconel covered rolls were fabricated by *The Youngstown Welding & Engineering Co.*, Youngstown, O.

WHEN you need a metal that will stand up in all dyeing processes, investigate Inconel*.

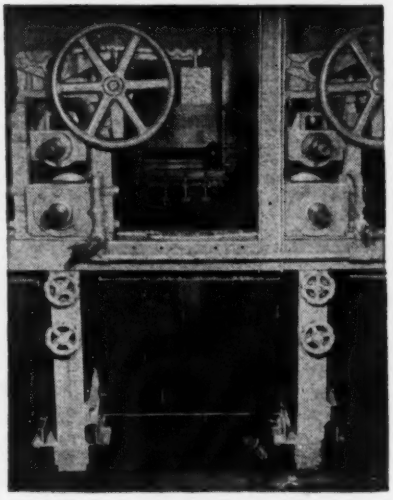
Its 80% nickel content assures resistance to strong alkalies, chlorides and reducing acids; its 14% chromium content prevents harmful attack by many oxidizing acids.

Inconel stands up against all types of dyes . . . acid and acid chrome . . . direct, vat, sulfur and developed colors. It resists corrosion by dilute hypochlorites and by sizing or other compounds and solutions used to impregnate fabrics. Peroxide bleaches have little effect on Inconel, and the alloy itself — unlike many other metals — does not harmfully accelerate decomposition of the bleach.

Having greater strength and toughness than structural steel, and possessing excellent fabricating and welding properties, Inconel makes possible the construction of extremely rugged, long-lived equipment.

Inconel is available in standard mill forms . . . in sheet and strip . . . in rod, bar, plate and tubing. Let's not forget castings, either. They're available too. And for equipment requiring plate thicknesses of 3/16" and heavier, you can get Inconel-clad steel . . . at a substantially lower price than solid Inconel.

Detailed information on corrosion resistance, mechanical and working properties, and typical uses of this versatile nickel alloy is contained in Technical Bulletin T-7, *Engineering Properties of Inconel.* A copy is yours for the asking. Drop us a line on your letterhead, and we'll see that it's sent promptly. *Reg. U.S. Pat. Off.



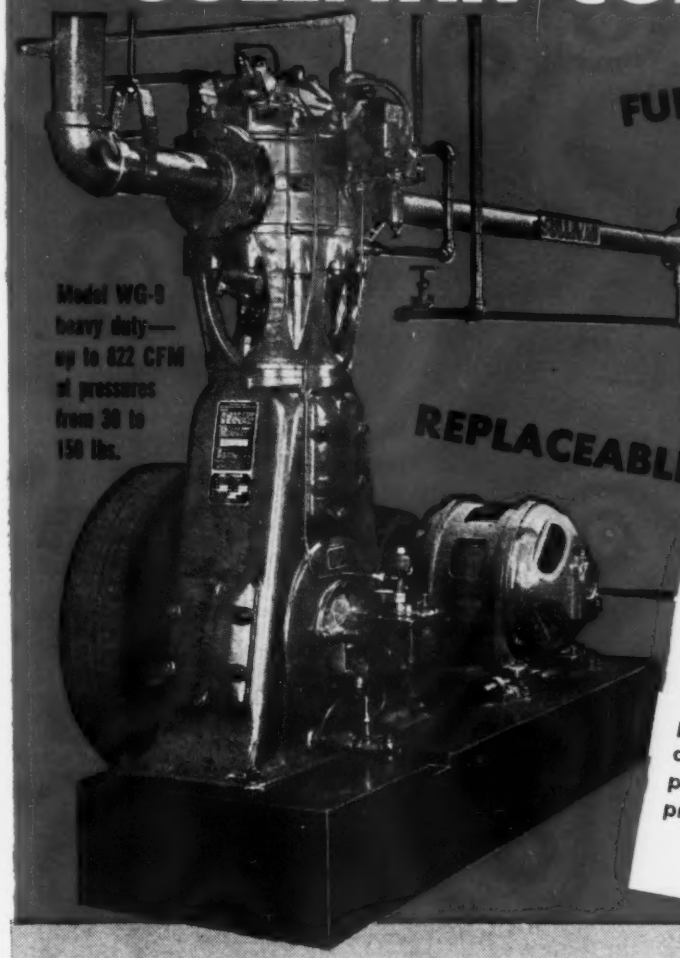
CLOSE-UP OF ONE SECTION of the eight-box washer. Welded tank is made of ¼" Inconel-clad steel plate, and contains 7 idler rolls of seamless Inconel tubing, 4" OD x .120 wall x 74⅛" face.

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK 5, N. Y.

INCONEL
80 NICKEL — 14 CHROMIUM

SAVE FLOOR SPACE

WITH EFFICIENT SULLIVAN COMPRESSORS



Model WG-9 heavy duty—up to 622 CFM at pressures from 30 to 150 lbs.

FULL FORCE FEED LUBRICATION

TROUBLE FREE

PRECISION-BUILT

REPLACEABLE CYLINDER LINERS

AIR COMPRESSORS
¼ HP to 600 HP

The Sullivan WG-9, like all Sullivan Air Compressors, packs high capacity into minimum space through advanced engineering and design. Sullivan Compressors are in satisfactory use throughout industry, providing dependable air power year in and year out.

WRITE FOR BULLETIN A-43 WHEN YOU WANT COMPLETE DETAILS.

SULLIVAN

STATIONARY AND PORTABLE AIR COMPRESSORS

W&D 1506

Consult a Joy Engineer

SULLIVAN DIVISION
JOY MANUFACTURING CO.
GENERAL OFFICES: HENRY W. OLIVER BUILDING · PITTSBURGH, PA.

For better piping Every Time
get Everything from Crane

Power . . . process . . . or general service piping . . . you're off to a good start and good finish on every installation when Crane is your partner. You get everything from one source . . . valves, fittings, pipe, fabricated assemblies, and accessories . . . with the quality you want in every last item. From design to erection, the whole job is simplified.

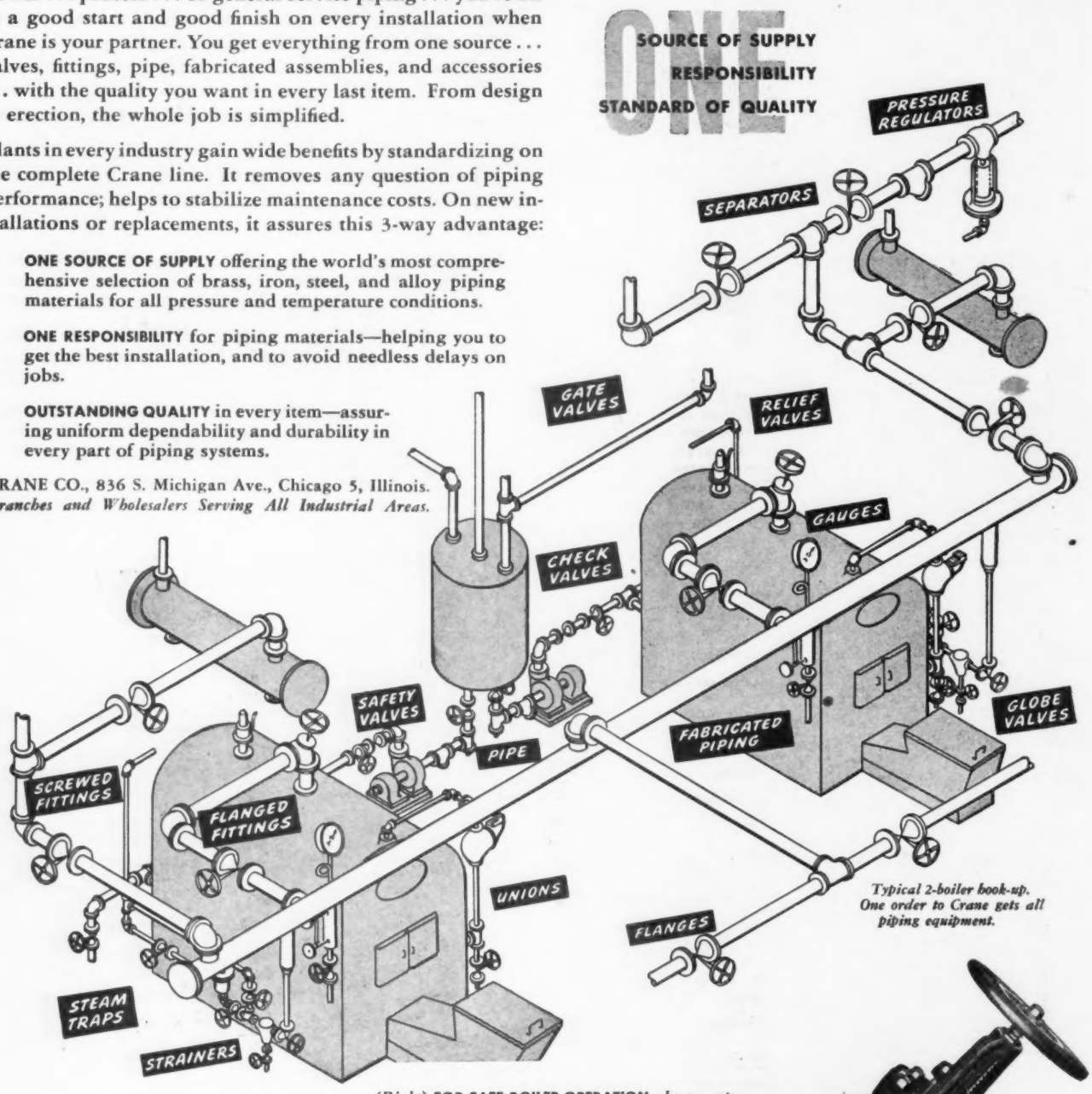
Plants in every industry gain wide benefits by standardizing on the complete Crane line. It removes any question of piping performance; helps to stabilize maintenance costs. On new installations or replacements, it assures this 3-way advantage:

ONE SOURCE OF SUPPLY offering the world's most comprehensive selection of brass, iron, steel, and alloy piping materials for all pressure and temperature conditions.

ONE RESPONSIBILITY for piping materials—helping you to get the best installation, and to avoid needless delays on jobs.

OUTSTANDING QUALITY in every item—assuring uniform dependability and durability in every part of piping systems.

CRANE CO., 836 S. Michigan Ave., Chicago 5, Illinois.
Branches and Wholesalers Serving All Industrial Areas.



Typical 2-boiler hook-up. One order to Crane gets all piping equipment.

(*Right*) **FOR SAFE BOILER OPERATION,** *choose automatic stop-check valves with a proved performance record. In iron or steel, Crane offers the exact type and size you need. For steam pressures up to 250 Pounds, 450 Deg. F. maximum, Crane recommends this Ferrosteel pattern, angle or straight-way, usable in two positions. Sizes up to 10 in. See your Crane Catalog.*

EVERYTHING FROM . . .

VALVES • FITTINGS
PIPE • PLUMBING
AND HEATING

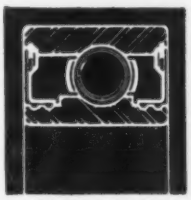
CRANE

FOR EVERY PIPING SYSTEM

BEARING FACTS NO. 3

The "Cartridge" Bearing

TOMORROW'S BEARING— HERE TODAY



Standard Type

This revolutionary forward step in bearing design has proved itself on the toughest assignments for the past eleven years. It is not only a highly efficient precision bearing, but its self-sealing features also help you improve the performance and lower the cost of producing your own equipment through streamlined design. Here are the facts:

Why it is a Better Bearing

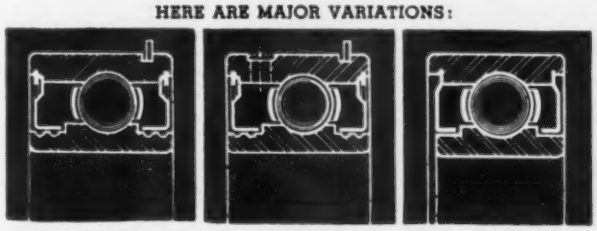
- 100% more grease capacity than any other standard self-sealed bearing.
- Factory packed with Norma "Stability-Tested" grease. Relubricate only after years of service.
- Grease retained close to balls and raceways by built-in, wearless seals.
- Flanged seals with grease grooves provide a dam against leakage; prevent entrance of dirt.

How it aids Your Design Problems

- Eliminates up to 10 machining operations and up to 22 parts required with some conventional mounting.
- Prevents slippage, peening, cocking—obviates use of steel inserts in soft metal housings.
- Increases shaft strength; reduces overhang; provides compactness — locknuts and wide sealing parts are eliminated.

PATENTED BY NORMA-HOFFMANN

HERE ARE MAJOR VARIATIONS:



Shoulder (snap) wire. No housing shoulders needed. Seals removable.

Grease filling opening. Shoulder ring optional. Seals removable.

Permanently sealed. For shafts under 20 m/m. Seals not removable.

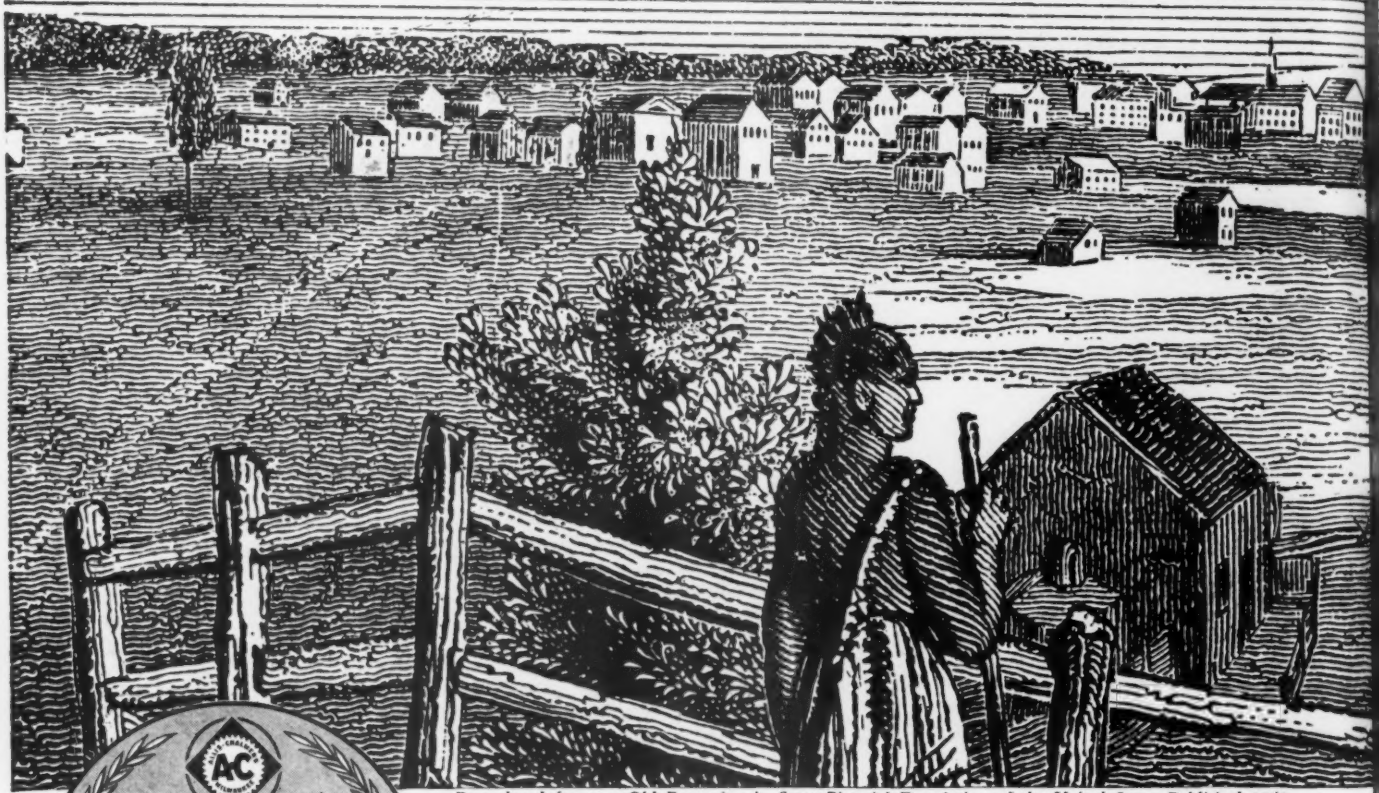
NOTE: Write for "Cartridge" Bearing Catalogue. Address Dept. AA

"NORMA-HOFFMANN"

PRECISION BALL, ROLLER AND THRUST BEARINGS

NORMA-HOFFMANN BEARINGS CORPORATION
STAMFORD, CONNECTICUT
FIELD OFFICES: New York, Chicago, Cleveland, Detroit, Pittsburgh, Cincinnati, Los Angeles, San Francisco, Portland, Ore., Seattle, Phoenix

Looking for Us,

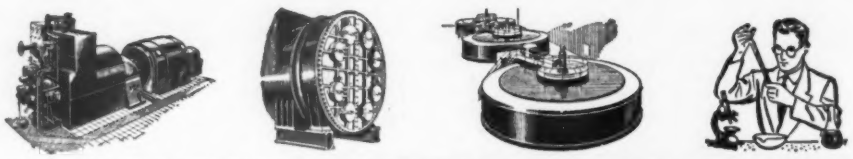


Reproduced from an Old Engraving in Sears Pictorial Description of the United States Published 1848

1847 1947

A CENTURY OF SERVICE to Industry THAT MADE America Great

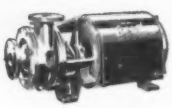
One of the Big 3 in Electric Power Equipment



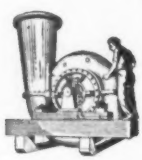
COMPLETE POWER GENERATION MACHINERY — Steam Turbines, Condensers, Air Ejectors, Hydraulic Turbines, Generators, Boiler Feed, Condensate, and Circulating Pumps, Water Conditioning . . .

Motors — All Types

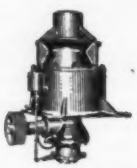
Texrope V-Belt Drives



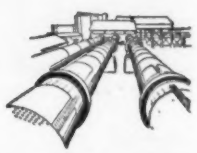
Centrifugal Pumps



Blowers & Compressors



Crushing, Cement, Mining Machinery



Chemical & Pyro-Process Equipment

Chief?

We were here when Milwaukee was spelled M-I-L-W-A-U-K-I-E!

MILWAUKIE, 1847 — A struggling frontier settlement celebrates its first birthday... and a small factory in the center of town begins turning out its first product — *millstones.*

One-hundred years later, in 1947, this progressive metropolitan city salutes its oldest heavy machinery manufacturer — Allis-Chalmers . . . *one of the Big 3 in electric power equipment — biggest of all in range of industrial products!*

It is significant to know that today, practically every U.S. manufactured product is aided somewhere along its course by Allis-Chalmers equipment.

In building a *better* millstone, crusher, turbine, motor, V-belt drive — Allis-Chalmers has earned the respect and confidence of men in every industry.

* * *

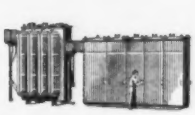
Allis-Chalmers is proud to serve this basic pattern of American industry and economy: Power and Electrical — Mining and Rock-Processing — Ferrous and Non-Ferrous Metal Producing — Metal Working — Food — Textile — Chemical — Petroleum — Wood — Rubber — General Manufacturing — Transportation — Construction — Public Works — Agriculture — and National Defense.

ALLIS-CHALMERS, MILWAUKEE 1, WIS.

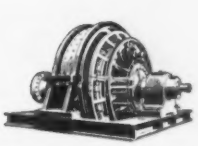
A 2193

ALLIS·CHALMERS

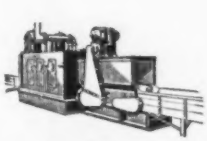
Biggest of All in Range of Industrial Products



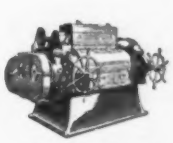
POWER DISTRIBUTION — Switchgear, Voltage Regulators, Transformers, Circuit Breakers, Unit-Substations, M-G Sets, Mercury Arc Rectifiers . . .



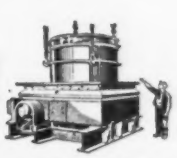
POWER UTILIZATION & CONTROL — Motors, Starters, "Regulex" Exciters, Electronic Heaters and Devices, Welders, Remote Control, Betatron . . .



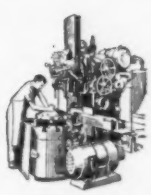
Pulp, Paper, Saw-Mill Equipment



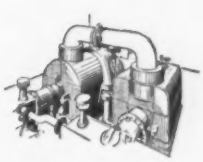
Food, Milling & Extraction Equipment



Precision-Casting — Foundry Equipment



Equipment for Machine Tools



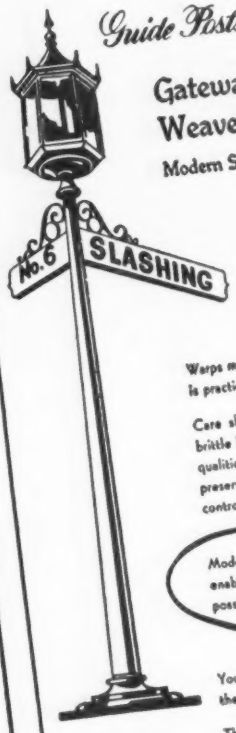
Marine & Defense Equipment

Farm & Industrial Tractors

A 2193

Here's what DRAPER says

Guide Posts to Increased Production



Gateway to the Weave Room

Modern Slashing enables you to
Reduce loom stops
Control quality
Maintain standards

Every Overseer of Weaving knows that efficiency in the Weave Room is to a considerable extent controlled by the quality of the work performed in the Slashing Room. Good warps reduce loom stops.

Warps must be as free from imperfections and crossed threads as is practical under normal running conditions.

Care should be taken to make sure that the yarn is not made brittle by undue stretch or tension in the Slasher and its weaving qualities impaired. The elasticity and life of the yarn must be preserved. The best of yarn can be seriously weakened by poor controls at the Slasher.

Modern Slashers and Sizing equipment with automatic controls enable you to turn out good warps consistently. They make possible accurate and continuous control of every operation.

You can maintain your own particular standards of quality and at the same time increase production.

The Slasher Room has been called the "Gateway to the Weave Room." You can make it a Gateway to Increased Production.

Sixth in a Series
Of What Well-Managed Mills Are Doing to Get the Best Results in Weaving

DRAPER CORPORATION
HOPEDALE MASSACHUSETTS

WE offer you complete Taylor Automatic Slasher Control applied to:

1. Cooking Kettle
2. Storage Kettle
3. Size Box Temperature and Level
4. Cylinders.

Protect your standard of quality—insure more uniform warps and increased weave room efficiency with Taylor Controls. Or write Taylor Instrument Companies, Rochester, N.Y., or Toronto, Canada.

Here's what happens when you install automatic control

CONSOLIDATED TEXTILE CO., INC.
P. O. Box 820
LYNCHBURG, VIRGINIA

January 13, 1947

Taylor Instrument Companies,
Box 110, Rochester 1, N. Y.

Attention Mr. W. W. Lockwood

Dear Sir:

Since the installation of the new Taylor Automatic Controls on our Slashers, we have found a definite improvement in the running of our weaving.

With these controls we have reduced the amount of starch used, reduced shedding in weave room, increased our efficiency, and the cloth weights have been more uniform. We are very much pleased with the improved results we are getting.

Yours very truly,

J. H. Burgess,
Asst. Supt.

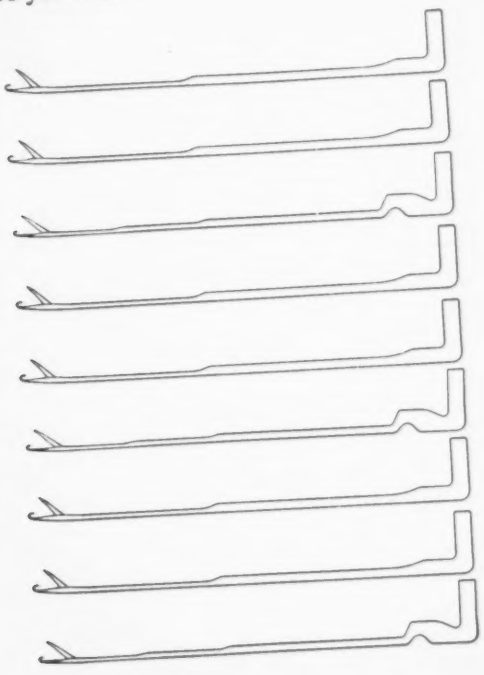
JHB:SL

Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.

Taylor Instruments mean ACCURACY FIRST!

know your NEEDLES— FOR WOMEN'S SEAMLESS HOSE

IF YOU ARE PRODUCING women's circular knit hosiery, the chances are you use one or more of the Torrington Needle Types illustrated here. But whatever *your* type of knitting —you can be sure there are types of Torrington Needles for *your* knitting needs. You'll find also, that Torrington Needles have extra fineness of temper, smoothness of finish and uniformity of dimensions that will *consistently* do the job you want.

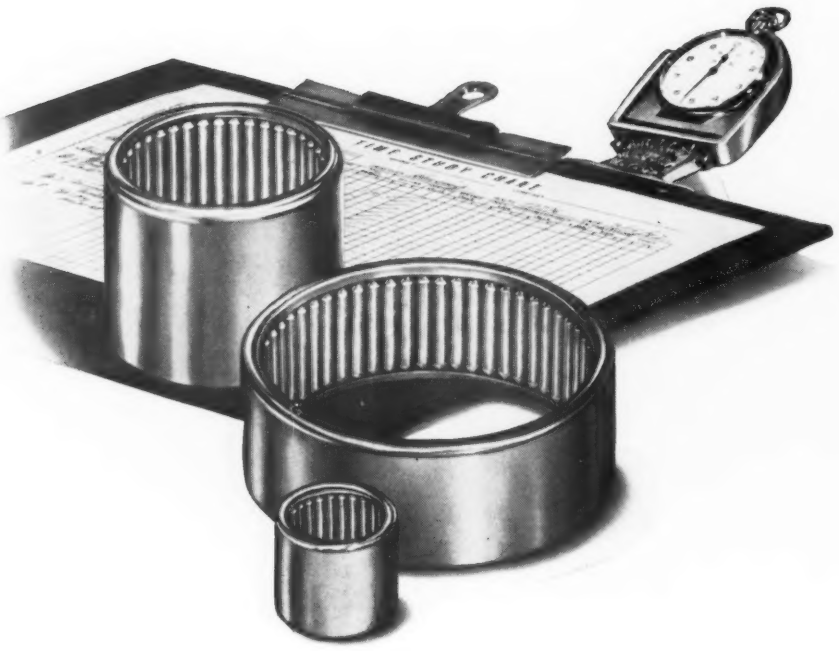


THE TORRINGTON COMPANY

Torrington, Conn., U. S. A. • Established 1866

Branches: New York • Philadelphia • Chicago • Greensboro, N.C. • Boston
St. Louis • Toronto, Canada • *Pacific Coast Representative:*
E. G. Paules, 1762 West Vernon Avenue, Los Angeles 37, Calif.

There's a **TORRINGTON** **LATCH NEEDLE** *for every type of Knitting!*



When every second counts . . .

Whether you are laying out a design, tooling up for production or meeting an assembly schedule, Torrington Needle Bearings can help you speed up every operation. You can

Save time with Needle Bearings . . .

first because their sturdy, compact construction helps simplify many design problems. Then, too, they help reduce fabricating time—a plain bore, machined to proper dimensions, provides the bearing housing. And assembly is speeded because no spacers or retainers are required—and installation involves only a simple arbor press operation. Thus, you can save production time and reduce costs with Torrington Needle Bearings. Our Catalog #32 contains complete data including many helpful production suggestions.

THE TORRINGTON COMPANY

TORRINGTON, CONN. SOUTH BEND 21, INDIANA

Offices in All Principal Cities

TORRINGTON BEARINGS

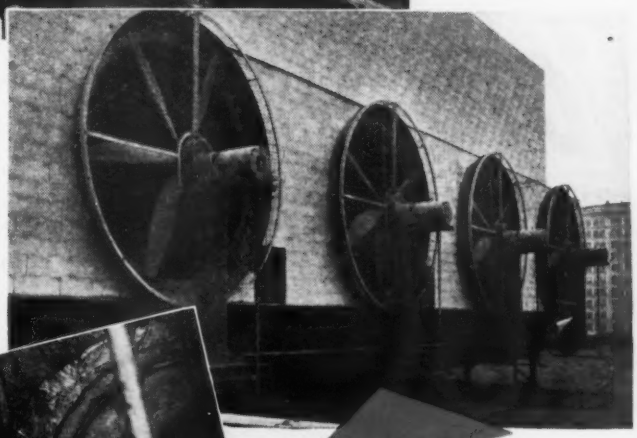
• NEEDLE • SPHERICAL ROLLER • STRAIGHT ROLLER • TAPERED ROLLER • BALL •

FOR *EVERY* BLOWER APPLICATION

THERE'S A **CENTURY MOTOR** THAT

WILL OPERATE

SMOOTHLY · QUIETLY · DEPENDABLY



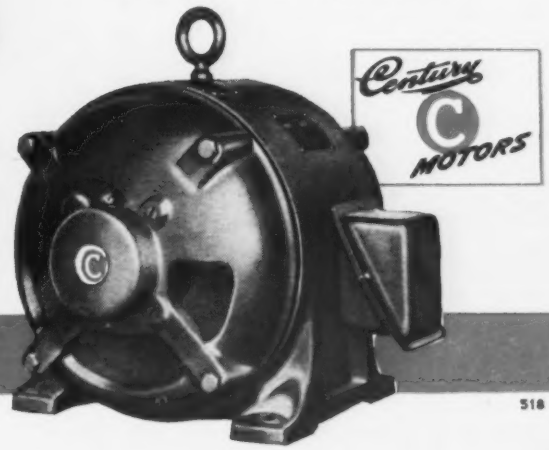
Four 20 h.p. Century Splashproof motors operate cooling tower fans—protected against all weather
5 horsepower Century Slip Ring motor operates a blower in a large hotel—provides variable speed to meet changing requirements of air conditioning

Century motors' quiet starting and operating and their unusual freedom from electrical and mechanical vibration contribute to comfortable air circulating in the home, commercial buildings or industrial plants.

There's a type of Century motor protection to meet the requirements of any kind of atmospheric condition — whether clean or dirty, hot or cold, whether indoors or outdoors.

Century builds a complete line of electric motors and generators, fractional and integral horsepower, in the popular sizes to meet the requirements of industrial production, processing, commercial and home needs.

Specify Century for all your electric power requirements.



CENTURY ELECTRIC COMPANY

1806 Pine Street, St. Louis 3, Missouri

Offices and Stock Points in Principal Cities

518

● Please note the change in the corporation name. The management believes that the new name NOPCO CHEMICAL CO., is more truly descriptive of the increasingly broader scope of the company's activities in chemical manufacturing.

●

An old friend

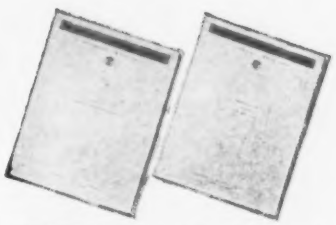
of the rayon industry returns

NOPCO* 1111

premier soaking oil and warp size softener

Back "in harness" for the first time since the beginning of the war, Nopco 1111 returns to assure rayon throwsters and weavers the same quality and uniformity which made it the standard in pre-war days.

*REG. U. S. PAT. OFF.



WRITE for data bulletins "Important Points Regarding Rayon Warp Sizing," "Nopco 1111 – Soaking Oil for Rayon Crepe Yarns."

NOPCO CHEMICAL COMPANY, HARRISON, N. J.

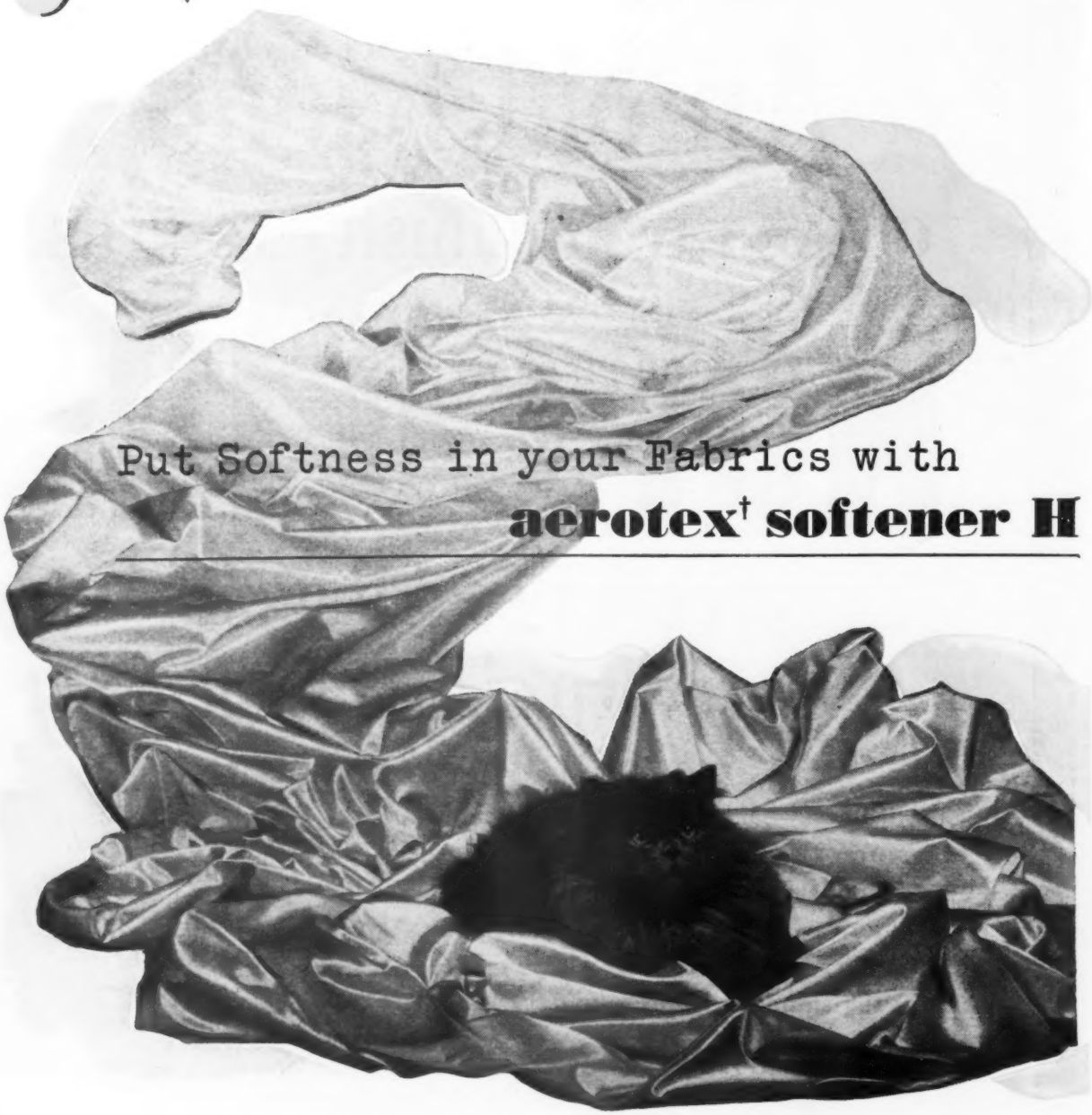
(Formerly National Oil Products Co.)

Branches: Boston • Chicago • Cedartown, Ga. • Richmond, Calif.

NOPCO

EVOLVED THROUGH RESEARCH

Textile Resins



Put Softness in your Fabrics with

aerotex† softener H

Softness is inherent in fabrics which have been treated with AEROTEX Softener H. This modern finish imparts a luxurious suppleness of drape . . . appealing lightness of texture. It combines readily with many of the synthetic type resins and can be applied in the wet processing of cotton, wool or synthetic fabrics where maximum softness of hand is desirable.

The use of AEROTEX Softener H will improve the texture of *your* fabrics. Our Textile Finishing Bulletin No. 111 gives complete details. Our Technical Staff is available for consultation.

Topics

Lanaset* RESIN

SHRINKAGE CONTROL

LANASET* Resin controls wool shrinkage and prevents garments from shrinking out of size. It also helps retain the original texture of woolens after repeated hand-launderings.

Sheerset* RESIN

LASTING CRISPNESS

SHEERSET* Resin. Now, at last—all types of sheers, from crisp cotton dresses for children to lovely marquisette bedspreads, can be washed and still retain their crisp, new look. And SHEERSET Resin gives shrinkage control by stabilizing the fabric.

Lacet* RESIN

NO IRONING

LACET* Resin takes the "labor" out of the washing of cotton or rayon Nottingham lace curtains, as it eliminates the need for wearisome starching, framing and ironing. Curtains treated with LACET Resin resist soil and retain their crisp, new look after numerous washings. Stretching (sagging) and shrinking are kept at a minimum.

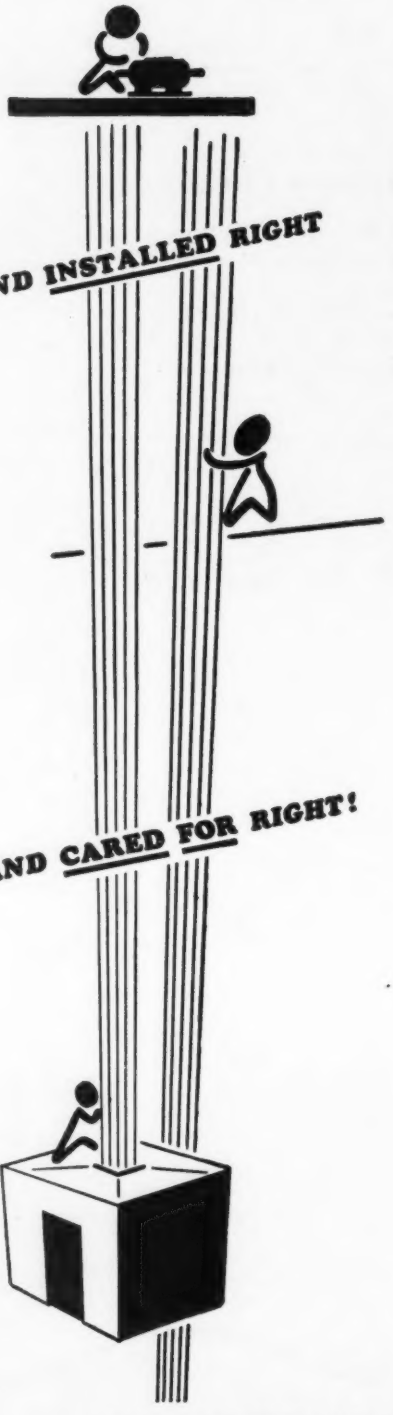
AMERICAN CYANAMID COMPANY
TEXTILE RESIN DEPARTMENT
BOUND BROOK, NEW JERSEY

New York • Boston • Philadelphia • Providence • Charlotte • Chicago

*Reg. U. S. Pat. Off. †Trade-mark of American Cyanamid Company

is there a little SKIMP *in your elevator?*

—NOT IF IT'S DESIGNED RIGHT, AND BUILT RIGHT,



AND INSTALLED RIGHT AND CARED FOR RIGHT!

OWNERS who do not believe in skimping, have placed more than 30,300 Otis elevators in the United States under Otis Maintenance service. We are responsible for the complete care of their elevator equipment, with rates fixed for a five-year period.

If we skimped anywhere along the line – in design, manufacture, installation or service – it would soon result in repair losses which would come out of *our* pocket.

SO— we don't skimp. Every part we make, every elevator we install and every service we perform is planned to give the most and to last the longest.

Whether it's installing the new, modernizing the old or maintaining the existing, Otis can serve you best. For the finest in vertical transportation call your local Otis office today.

Otis ELEVATOR COMPANY
OFFICES IN ALL PRINCIPAL CITIES

A whip crack is nothing but a sudden change in direction. It happens thousands of times a day in textile machines.

When the builder of your textile machines uses American Magnesium to cut the weight of the part that's doing the "whip cracking", you can run the machine faster, with less vibration, lower power cost, reduced wear.

Upon that principle alone, leading textile manufacturers are making important improvements in the equipment available to your mill today. When a manufacturer points out needle bars, actuating arms, levers, ring holders, supports, ring rails, and other parts made of American Magnesium, you can be sure he has built with low operating costs and low maintenance in mind. ALUMINUM COMPANY OF AMERICA, sales agent for American Magnesium products, 1705 Gulf Building, Pittsburgh 19, Pennsylvania. Sales offices in principal cities.

MANUFACTURERS OF TEXTILE EQUIPMENT

Write for booklet, "Magnesium in the Textile Industry". It describes fully the weight, corrosion, and production advantages offered by American Magnesium.

MAGNESIUM MAZLO Reg. U.S. Pat. Off. PRODUCTS

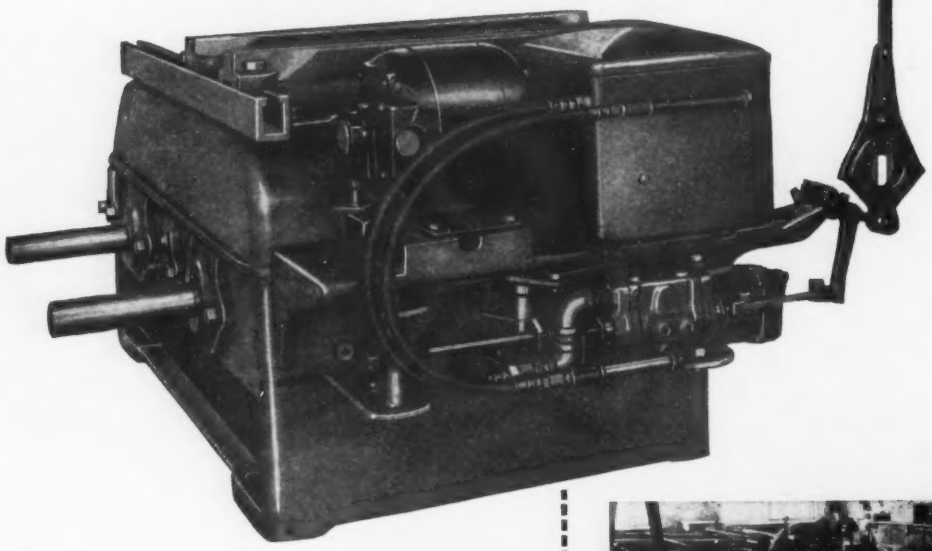
AMERICAN MAGNESIUM CORPORATION

SUBSIDIARY OF ALUMINUM COMPANY OF AMERICA

Automatic Tension Control

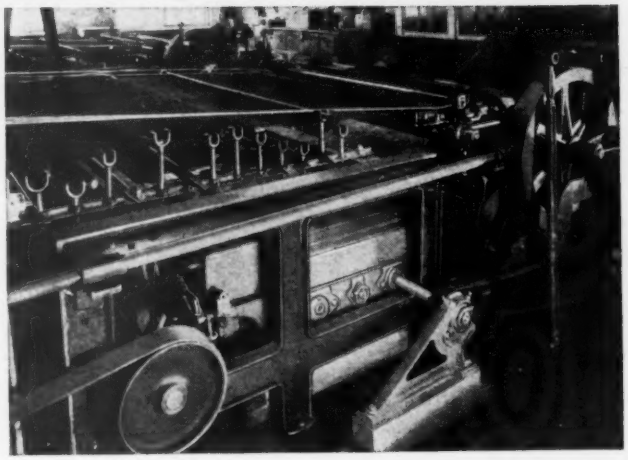
WITH REEVES SENSITIVE PISTON-TYPE HYDRAULIC REGULATION

pressure of only 1 to 2 ounces activates this indicator lever to effect speed changes



To run cotton, wool or any synthetic material in a continuous process, *without stretch* on cloth, install REEVES Hydraulic Automatic Speed Control. Consisting of the time-tested REEVES Variable Speed Transmission with piston-type, hydraulic regulation, this is the simplest, most dependable drive and control available. It can be serviced and maintained by any mechanic. No special tools nor training are necessary.

So sensitive is REEVES Hydraulic Automatic Control that pressure of only 1 to 2 ounces through follower roll, dancer roll or other activating force will produce changes in speed to regulate tension automatically and precisely to the degree desired. Already being widely used in range finishing—on beaming warpers, slashers and other winding processes. Our "field" engineers are thoroughly experienced in textile processes. Write us for special bulletin on REEVES Hydraulic Automatic Speed Control and ask for copy of complete catalog W-450.



Illustrated above is a REEVES Transmission with hydraulic automatic control driving loom beam of slasher. The sensitive hydraulic control lever is connected to a very simple follower roll which bears lightly against the yarn on the loom beam. Through its hydraulic control, the REEVES unit automatically reduces the r.p.m. of the loom beam and maintains constant y.p.m. surface speed as the beam increases in diameter. Reduces yarn stretch in slasher to less than 1%.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

Recognized leader in the specialized field of Speed Control Engineering.

Accurate Variable

REEVES Speed Control

Gives the Right Speed for Every Job!

IN SHIRTINGS . . .
Color
IS PROFIT!
Franklin Process
LARGEST PACKAGE DYERS IN THE WORLD
PHILADELPHIA • GREENVILLE • CHATTANOOGA
YORK REPRESENTATIVE—40 WORTH STREET

MOP YARN OR 160/1

It's routine for the FOSTER MODEL 102

THE TWO CONES illustrated herewith—one containing the equivalent of ¼ and the other containing 160/1—illustrate the extreme flexibility of the Foster Model 102 as regards the counts of yarn it will handle.

A big change in yarn count requires a change in the angle of wind for best results on any machine. This is accomplished on the Foster Model 102 simply by changing four small gears in the head end—a matter of minutes. Range of 9° to 18° is obtainable in this way.

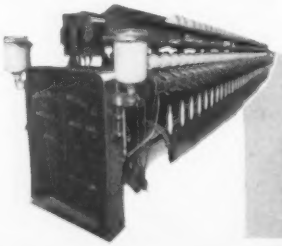
The Foster Model 102 is equally flexible as regards type of yarn. It will handle any kind of staple fibre, including wool, worsted, merino, cotton, mercerized, spun rayon, spun nylon and blends without costly changing of parts. Taper of cone may also be varied at small expense.

This machine can also be built to wind 7″ traverse packages instead of 6″ traverse packages if desired.

OTHER ADVANTAGES

1. Doubles the production, compared with obsolete models.
2. Reduces operating cost by ⅓, compared with obsolete models.
3. Repair costs run as low as $3.50 per year per 100 spindle machine.
4. Labor and time saving devices include self threading tension and slub catching devices, cone holder which swings out for easy doffing, empty bobbin conveyors which empty into STANDARD sized trucks.

SEND FOR BULLETIN A-95



FOSTER MACHINE CO.

WESTFIELD, MASSACHUSETTS, U. S. A.

Announcing the consolidation of—

CLOVERLEAF MANUFACTURING COMPANY
HONESDALE, PA.

And

Freeland SPOOL & BOBBIN CORPORATION
HAZLETON, PA.

Into

CLOVERLEAF Freeland CORPORATION

HONESDALE, PA. HAZLETON, PA.

QUICKER DELIVERIES *through* **INCREASED PRODUCTION** *will result from streamlining and departmentalizing the combined facilities of our two plants. When fully integrated, the resulting increased capacity should bring about lower costs which in turn should reflect* **LOWER PRICES** *to you. The two companies have long been recognized as leaders in their field of the Textile Industry. By combining experience, workmanship, and methods which have for years produced outstanding spools, bobbins, and accessories, our* **HIGH QUALITY** *will naturally be maintained to meet the exacting requirements of fine yarn producers.*

Present orders on the books of each company will be allocated between our two plants to best advantage in order to bring about a speed-up in deliveries at the earliest possible date.

Executive Offices: **HAZLETON, PA.** *Sales Offices:* **HONESDALE, PA.**

Go "National" for Lead LININGS

What kind of Sheet Lead Lining do you need to fight acid corrosion?

1 Our Regular CHEMICAL LEAD? This is a practically pure lead, free from bismuth, to which has been added a small amount of copper to boost corrosion resistance and endurance limit. Used long and successfully throughout industry for lining tanks and for covering apparatus exposed to corrosive fumes or acid splash, it is the base lead for acid handling. The other types, like Tellurium Lead or Antimonial Lead, are simply Chemical Lead alloyed with varying quantities of tellurium or antimony to impart extra qualities.

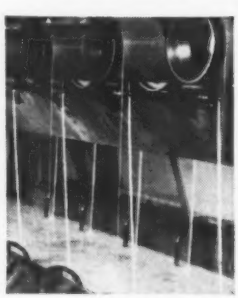
***Lead sheet** is easily formed into any shape and burned to give you one-piece, corrosion-resisting tank linings.*

2 Our Special TELLURIUM LEAD? This is Chemical Lead containing a small amount of tellurium. You get all of lead's regular advantages plus certain new ones to meet special service conditions.

One outstanding feature of Tellurium Lead is its increased corrosion resistance at high temperatures.

Another is its ability to work-harden. Mechanical stress, such as bending, stretching or hammering, actually *increases* Tellurium Lead's tensile strength and resistance to fracture.

Tellurium Lead is especially recommended where you have to combat *both* stress and corrosion.



***Tellurium Lead** stands up under vibration or fatigue stresses. That's why it was used here as a protective covering on rayon spinning machines.*

3 Our Extra-Strong ANTIMONIAL LEAD? This is made from either Chemical or Tellurium Lead by adding small amounts of antimony to secure greater tensile and mechanical strength. For example, lead containing 6% antimony has a tensile strength almost twice that of Chemical Lead. This, plus its stiffness, makes it suitable for use where mechanical strain is severe or where linings are supported only by a skeleton framework.

Antimonial Lead also is harder and more resistant to abrasion and cutting. It's a good bet wherever erosion or mechanical abuse exists. However, because antimony lowers the melting point, Antimonial Lead is not recommended for use above 240°F.

***6% Antimonial Lead** was used to line these precipitating tanks because it has the extra strength needed to withstand the vacuum used in the operation.*

No Matter What Your Acid-Handling Problem...

Go "National" for Lead

National Lead is ready to consult with you and supply any type of lead pipe . . . valves . . . sheet . . . lead-lined or lead-covered equipment . . . even complete acid recovery plants. And behind every National Lead product, every National Lead recommendation, are years of experience and many important installations in every field handling corrosive liquids and gases.

NATIONAL LEAD COMPANY
111 BROADWAY, NEW YORK 6, N. Y.
Offices and Plants in Principal Cities and Canada

better WEAVING through research

Scott Single-Strand Tester operating in a Staley Laboratory where a temperature of 73° F., with a relative humidity of 65%, is constantly maintained.

•

Staley Laboratories are equipped to completely test the weavability of warp yarns....To analyze and recommend sizing formulas for your mill requirements. This is only a portion of the research service that Staley's offer to textile men. Our skilled technicians and modern laboratories are ready to help you with any sizing problem....A policy of cooperation and service that prompts mill owners, managers and superintendents to say they like to do business with Staley's.

Our complete line of Textile Starches has been laboratory developed to meet all requirements of weavability and weight, and is under exacting Control Laboratory supervision throughout the entire processing operation. As a result, Staley Starches can be depended upon for consistent, high quality and performance from shipment after shipment.

Write, wire or telephone for detailed information.

STALEY STARCHES

Staley's CORN AND SOY BEAN PRODUCTS

ATLANTA • SPARTANBURG
DALLAS • PHILADELPHIA
CHICAGO • NEW YORK
BOSTON • SAN FRANCISCO

. E. STALEY MFG. COMPANY

DECATUR, ILLINOIS

How Many Spare V-Belts Do You Really Need?

With only four reels of Veelos, he has a choice of 316 standard sizes.

WHEN Veelos on reels goes into a stockroom, a costly mass of many-size endless V-belts is eliminated. Four reels of Veelos, the link V-belt, provide replacements for as many as 316 sizes.

Do you require less? From a single 100-foot reel of Veelos any length V-belt can be quickly uncoupled, made endless and installed. You need *not stock even one* spare endless V-belt. There is none to age and deteriorate. With Veelos on reels, desired belt lengths are always available, easy to locate. Stock records are simplified... storage space saved.

Veelos is available in all standard sizes, fits all standard grooves, is packaged on standard 100-foot reels. Ask about the many, exclusive advantages of Veelos on reels.

Over 300 Veelos distributors and sales engineers located in principal cities to serve you.

MANHEIM MANUFACTURING & BELTING CO.
MANHEIM, PENNSYLVANIA

VEELOS
THE LINK
V-BELT

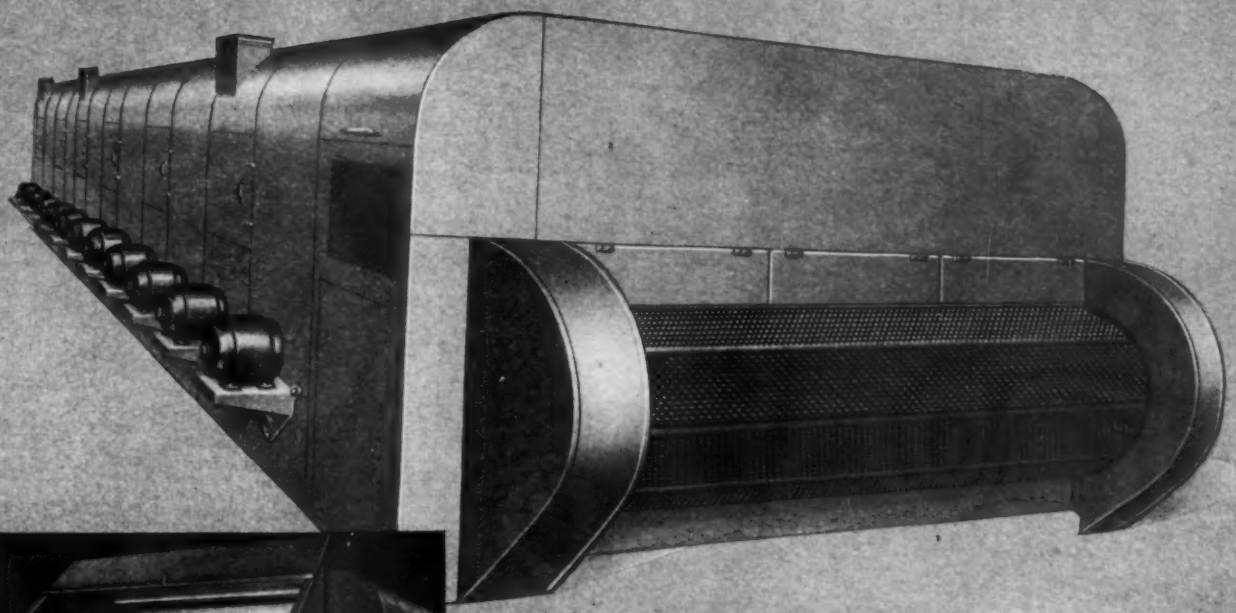
Adjustable to any Length
Adaptable to any Drive

Tested, Proved and Adopted by American Industry

Known as VEELINK outside the United States

SARGENT'S STOCK DRYER

MODERN—AUTOMATIC



The new, Fisher Type Rotary Feed which has replaced the conventional spiked Apron Type Feeder

for Drying Wool, Cotton, Rayon, Other Synthetic Fibres, Rags

The Sargent Automatic Stock Dryer meets all modern requirements of textile mills for fast, trouble-free production, at minimum cost.

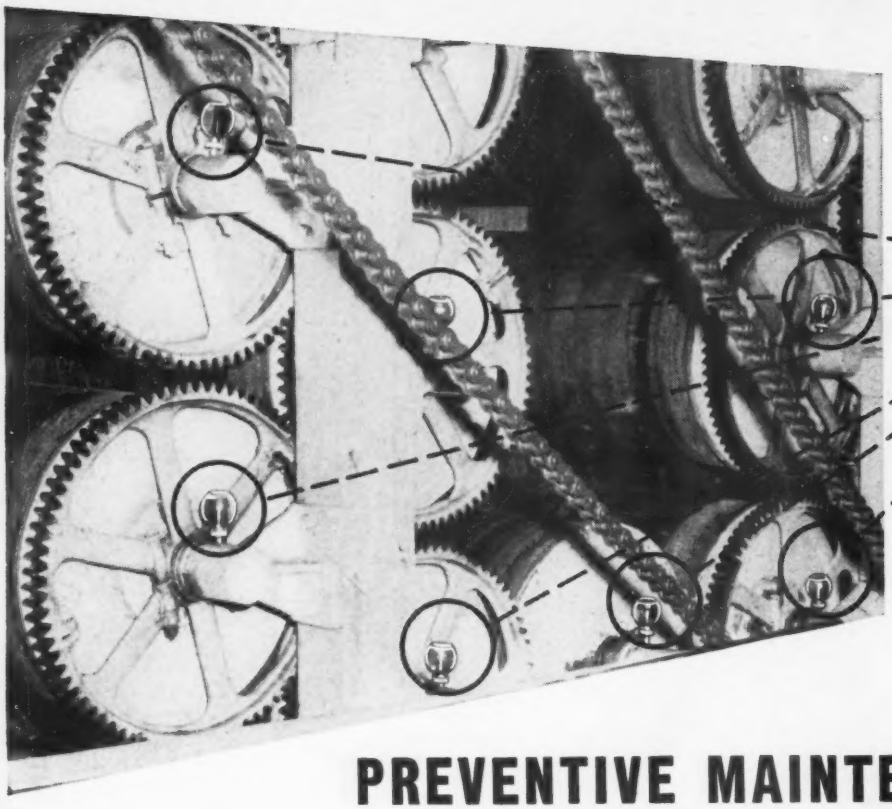
Its high-velocity, pressure-type fans are directly connected to standard frame, ball-bearing motors. The machine is vibration-free. Stock is carried on the Conveyor of heavy-gauge steel sectional flights which are built to specifications for the type of work required. The Conveyor presents a constantly smooth surface, traveling on a variable-speed, covered chain drive. Some of its other features include: highly efficient heating coils; low steam consumption; heavily insulated removable hinged panels for easy inspection of work in travel; thermostatic controls; ease of cleaning; a minimum of maintenance cost.

The machine's streamlined design affording a maximum area of drying surface, requires unusually small floor space for the volume of its high production.

Please write us for complete details.

C. G. SARGENT'S SONS CORPORATION

GRANITEVILLE, MASSACHUSETTS, U.S.A.



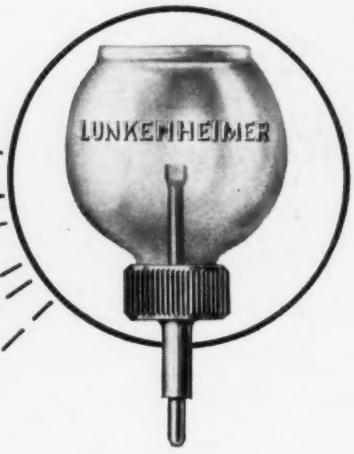


Fig. 1815
BOTTLE OILER
Globe Body
Fully automatic. Insures efficient, uniform, economical lubrication of bearing. Feeds oil only when shaft is in motion.

PREVENTIVE MAINTENANCE PAYS in LOWERED PRODUCTION COSTS

A preventive maintenance program in a prominent mill has resulted in the installation of more than 35,000 LUNKENHEIMER Bottle Oilers. Extensive use of this form of lubrication has proven conclusively SIX IMPORTANT REASONS WHY:

Labor Saved: with bottle oilers, lubrication is necessary only at warp changes. Contrast this with weekly lubrication or even daily attention when hand oiling methods are used.

Better, Easier Oiling: with the warp off the loom, all bearings are more easily accessible —easier to reach and more certain to be lubricated. Excessive wear and damage from insufficient lubrication is eliminated.

Material Spoilage Eliminated: when lubrication is done with the warp off the loom, there is no chance of the lubricant getting on the material, less chance of getting on the floor or loom to be picked up by the material later.

Less Expensive Lubricant: with Lunkenheimer Bottle Oilers, a good grade of mineral oil is used at lower cost.

Less Lubricant Used: in actual test, a bearing required but 3 ounces of oil for the test period . . . a lubricant saving of 85 per cent over other methods.

Positive Lubrication: with Lunkenheimer Bottle Oilers, there is no chance of a bearing being unlubricated . . . even a casual inspection will reveal neglected bearings at a glance.

Ask Your Lunkenheimer Distributor

for Circular No. 560 giving full details on application and operation of Lunkenheimer Bottle Oilers.

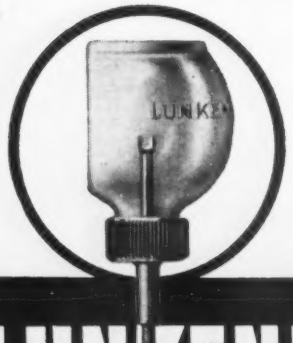


Fig. 1816
BOTTLE OILER
Flat Side Body
For use where space does not permit installation of Globe Body Oiler. All operating features same as in Fig. 1815.

LUNKENHEIMER VALVES & LUBRICATING DEVICES

Beauty—with a bonus

KODA, Eastman filament acetate yarn, has always rated top fashion billing. It is acetate yarn at its best —smooth, supple, and resilient— beautifully balanced, consistently uniform in its properties.

In addition, KODA has bonus qualities of increasing importance to industry. Dielectric strength is an example. And thermoplasticity. And mildew resistance. Often the combination of these special qualities produces a more efficient fabric than can be obtained with other fibers, natural or synthetic.

Whether for fashion or special function, KODA belongs in the plans of progressive weavers and knitters.

. . .

For further information about KODA, consult A. M. Tenney Associates, Inc., 10 East 40th St., New York, sales representatives for TENNESSEE EASTMAN CORPORATION (Subsidiary of Eastman Kodak Company), KINGSPORT, TENNESSEE.

EASTMAN ACETATE RAYON

Mystic Maze

(Isotherm Adsorption Apparatus)

Seen through this mystic maze of tubes and wiring is a Sinclair Research technician. What his apparatus means to users of industrial lubricants is no mystery, however.

At Sinclair Laboratories, the Isotherm Adsorption Apparatus is used constantly to determine the effectiveness of adsorbents used in lubricating oil refining procedures. Because Sinclair lubricants are made with infinite care to suit the specific requirements of your equipment, it is highly important to know exactly how adsorbents, catalysts, and other treating materials perform in a refining process.

This intricate apparatus is an assurance that Sinclair lubricant manufacture guarantees the very highest quality product. It is one more evidence of the painstaking Sinclair research and refinery control that result in outstanding lubricant performance.

Sinclair
Textile Oils

LILY WHITE OILS

In grades to suit all spindle speeds, loads and operating conditions

Light color, long life

SINCLAIR REFINING COMPANY • 630 FIFTH AVENUE, NEW YORK 20, N. Y.

SINCLAIR

Lubricants for Industry

FINEST CRUDES + EXPERT RESEARCH and MANUFACTURING CONTROL = OUTSTANDING PERFORMANCE

"Let's get back to the old milk bottle system"

Mother was a great little manager. She didn't have much to work on, but she always had the ready cash to buy the things the family needed.

Her system was very simple. She didn't keep any books. She just had eight milk bottles on a shelf in the kitchen.

Each bottle was a bank—a depository for funds for a specific purpose: (1) Food; (2) Building and Loan; (3) Fuel and Light; (4) Clothing; (5) Emergencies; (6) Charity; (7) Insurance; (8) Savings.

Every Saturday evening, after supper, Father would open his pay envelope and he and Mother would divide the money—giving to each Fund its proper share.

There was nothing original in the idea. The thing that made Mother's system work was that she and Father never *cheated* — never *robbed* one Fund to pay another.

•

A Manufacturer was going over his Financial Statement. "We've got a lot of money in that Reserve for Depreciation," said he, "Where is it?"

"It's in the business," said the Auditor.

"That's not where it belongs," said the Manufacturer.

"A Reserve for Depreciation belongs in *reserve*, immediately available for the purchase of New Machinery . . . Let's get this business back on the old Milk Bottle System and keep it there."

•

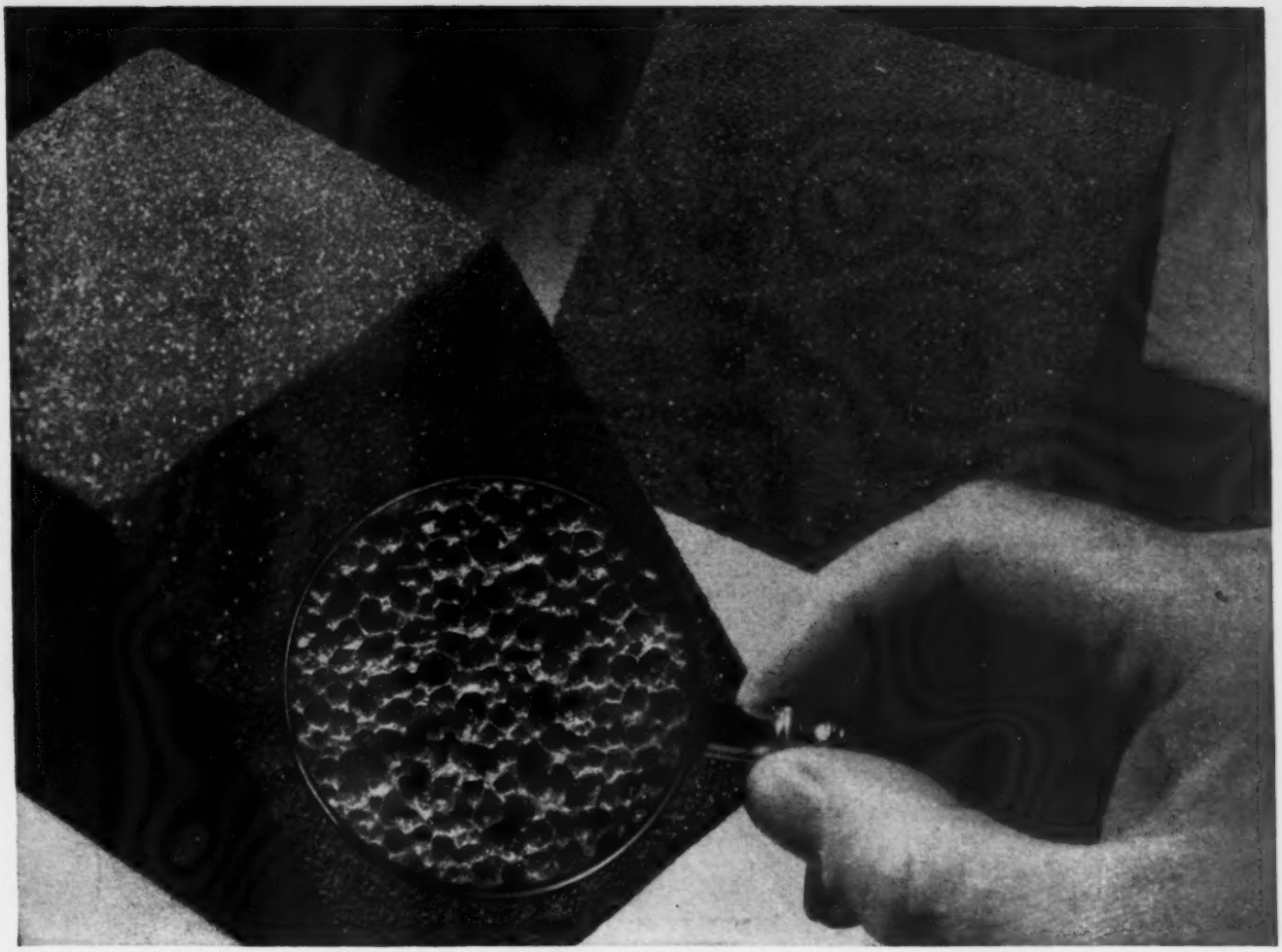
An advertisement on "Good Housekeeping in Business," published by the makers of Reading Full-Fashioned Knitting Machines.

TEXTILE MACHINE WORKS
READING, PENNA.

Festive Fashion . . . There's excitement in sheer, flawlessly knit full-fashioned stockings. Such perfection is always achieved with the best needles. The TMW "Fixture Drawn"* process, which holds needles straight and true, is your assurance of superior needle performance. Finer quality fabrics. Greater profits. Let us put your needle bars in shape for faster, more accurate, more profitable knitting.

* Reg. U. S. Pat. Off.

TEXTILE MACHINE WORKS • READING, PA.



HERE'S THE SECRET OF Permanent Insulation

● Look at the picture for a minute. You can see that PC Foamglas is composed of tiny glass cells . . . millions of them. And these cells are filled with sealed-in air.

Used as an insulating material on roofs and in walls and floors, PC Foamglas helps to maintain desired temperature levels and to minimize condensation. Because it is glass—and therefore waterproof, verminproof and fireproof—it also has the unique advantage of retaining its insulating value *permanently*.

When you are figuring insulation, our engineers will be glad to help you decide on the *proper thickness* of PC Foamglas to give you efficient, permanent insulation. Meanwhile, send the coupon for your selection of our helpful, informative free booklets. Pittsburgh Corning Corporation, 632 Duquesne Way, Pittsburgh 22, Pa.

· Also Makers of PC Glass Blocks ·

PC FOAMGLAS *Waterproof Fireproof* **INSULATION**

T. M. REG. U. S. PAT. OFF.

Pittsburgh Corning Corporation
Room 439, 632 Duquesne Way
Pittsburgh 22, Pa.

Please send me without obligation, your free booklets on the use of PC Foamglas insulation for:

Roofs_____ Walls_____ Floors_____

Name_____

Address_____

City_____ State_____

FOR ADDITIONAL INFORMATION SEE OUR INSERTS IN SWEET'S CATALOGS.

Control YOUR "APPLIED" HORSEPOWER

THE *Wood's* WAY

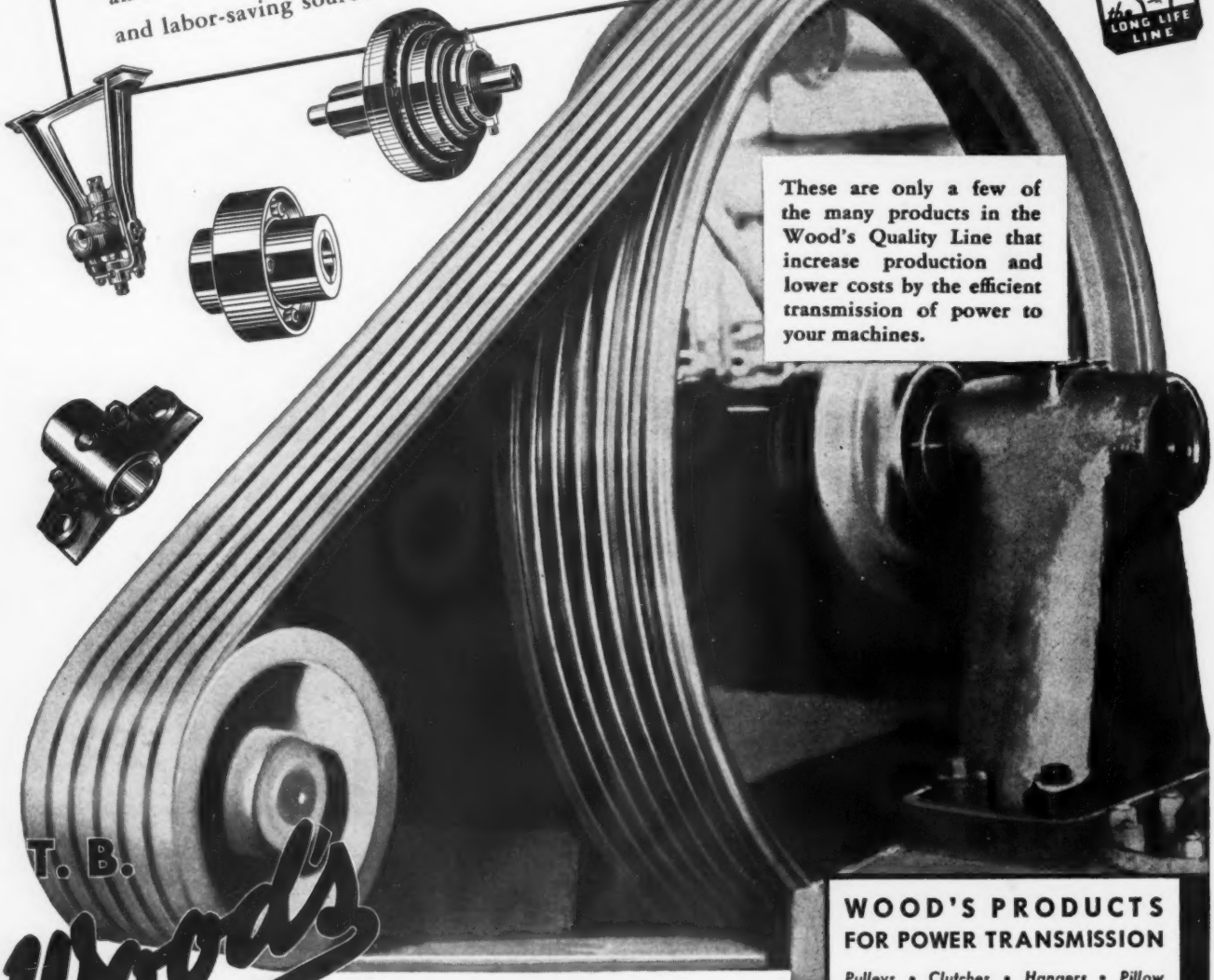
It's a good way to get top efficiency . . . trouble-free operation . . . and reduced replacement costs through *longer service life.*

Characteristic of the Wood's Way is the inherent quality of the Wood's Line. Every product is skillfully designed, precision-made and accurately controlled to produce a time- and labor-saving source of power.

Wood's Products . . . the result of more than 88 years' experience in the design, development, manufacture and application of Quality Power Transmission Equipment. . . . are at your service to increase production; assure controlled horsepower; and reduce maintenance costs.

Write for detailed information.

the LONG LIFE LINE



These are only a few of the many products in the Wood's Quality Line that increase production and lower costs by the efficient transmission of power to your machines.

T. B. *Wood's* SONS COMPANY
CHAMBERSBURG, PA.

WOOD'S PRODUCTS FOR POWER TRANSMISSION

Pulleys • Clutches • Hangers • Pillow Blocks • Couplings • Bearings • Collars V-Belt Sheaves and Complete Drives

BRANCHES: BOSTON, MASS. NEWARK, N. J. PITTSBURGH, PA. CLEVELAND, OHIO DETROIT, MICH.

He talked *Chlorine* into an industry

"A great talker"—so a biographer describes James Watt, brilliant father of the steam engine. One can almost visualize him as he regaled his father-in-law, MacGregor, with the time-saving advantages of using "oxygenated muriatic acid" in his bleach works. Chlorine was thus talked into the first commercial bleaching application—an application that changed the entire character of an industry.

From this experimental beginning, the bleaching powers of Chlorine have been utilized with inestimable value in the textile and paper industries. In its comparatively new role as the versatile tool of chemical synthesis, Chlorine is helping to bring many new refinements to our civilization . . . a civilization it has protected from pestilence through its well-known germicidal properties.

Columbia, with its associates, is the nation's largest merchant producer of Liquid Chlorine.

COLUMBIA CHEMICALS

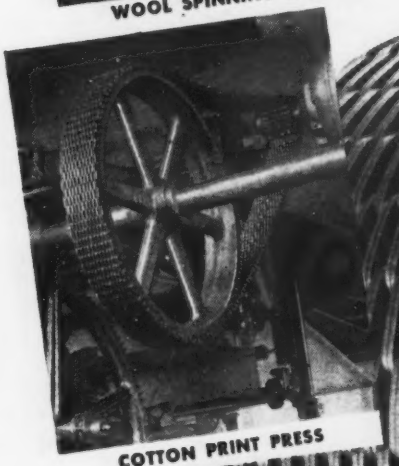
PITTSBURGH PLATE GLASS COMPANY • COLUMBIA CHEMICAL DIVISION

FIFTH AVENUE at BELLEFIELD, PITTSBURGH 13, PENNSYLVANIA • Chicago • Boston • St. Louis • Pittsburgh
New York • Cincinnati • Cleveland • Philadelphia • Minneapolis • Charlotte • San Francisco

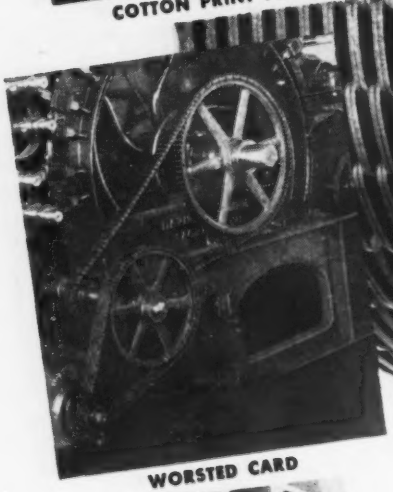
COLUMBIA ESSENTIAL INDUSTRIAL CHEMICALS
Soda Ash · Caustic Soda · Liquid Chlorine · Sodium Bicarbonate · Pittchlor *(Calcium Hypochlorite)* · Silene EF *(Hydrated Calcium Silicate)* · Calcium Chloride · Soda Briquettes *(Iron Desulphurizer)* · Modified Sodas · Caustic Ash · Phosflake *(Bottle Washer)* · Calcene T *(Precipitated Calcium Carbonate)*

WHITNEY CHAINS DRIVE STANDARD IN TEXTILE MACHINERY

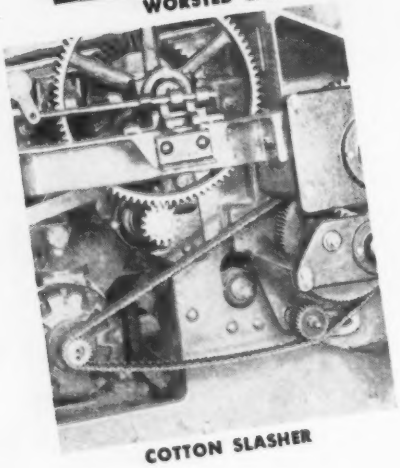
WOOL SPINNING FRAME



COTTON PRINT PRESS



WORSTED CARD

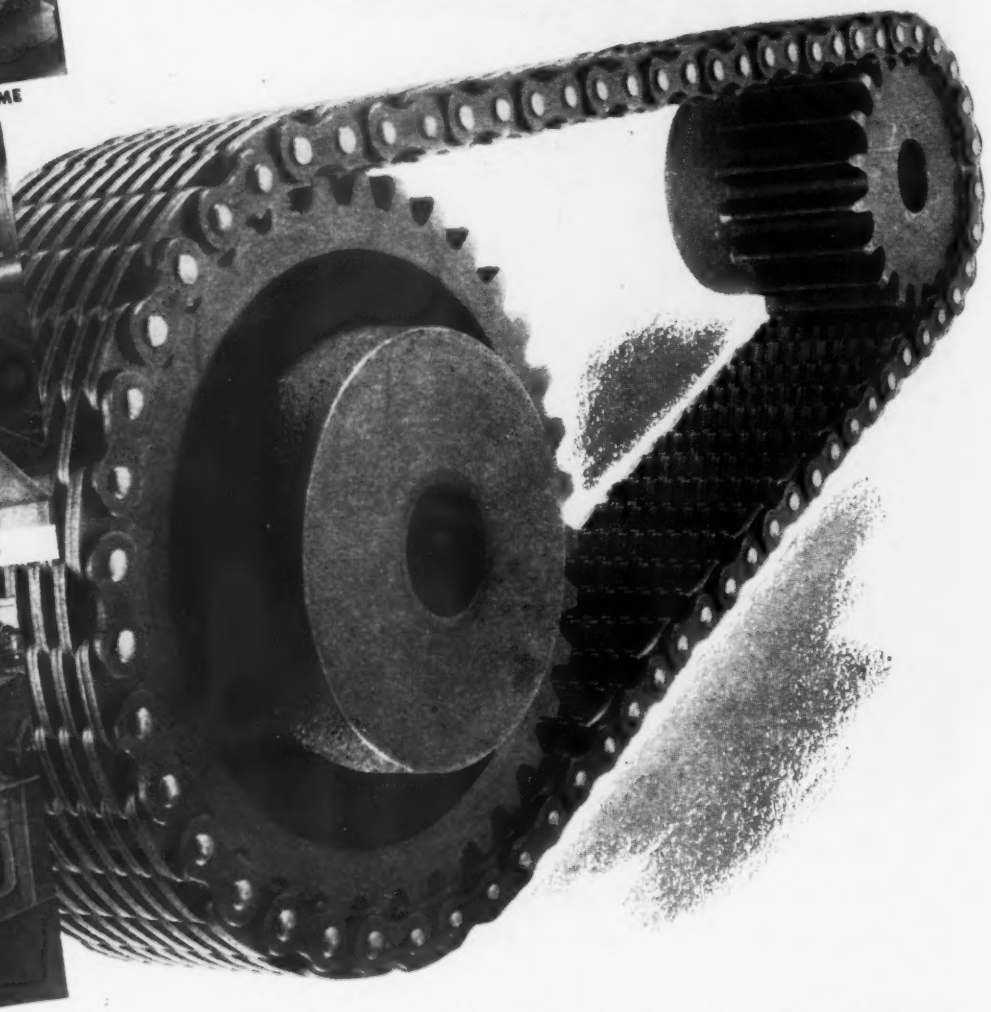


COTTON SLASHER

For Efficient, Positive Power that Assures Product Uniformity...

It's Whitney

SILENT CHAIN DRIVES



Smoothly and silently, Whitney Silent Chain Drives deliver *full power* to driven elements without *slippage* or friction loss. Their positive grip transmits constant uniform speed . . . assures product uniformity . . . saves money by minimizing "seconds" and rejects. Precision built with hardened alloy steel parts, they give maximum service with little maintenance even under the severest of operating conditions.

Teamed up with these efficient chains are accurately made Whitney Cut Tooth Sprockets . . . correctly designed to insure smooth, quiet performance and maximum operating efficiency.

Add these operating advantages to the Whitney *flexibility* in meeting drive design problems and you'll readily see why Whitney Silent Chain Drives are used as original equipment by most textile machinery manufacturers. It pays to *standardize* on Whitney. Write for information.

The Whitney Chain & Manufacturing Co.

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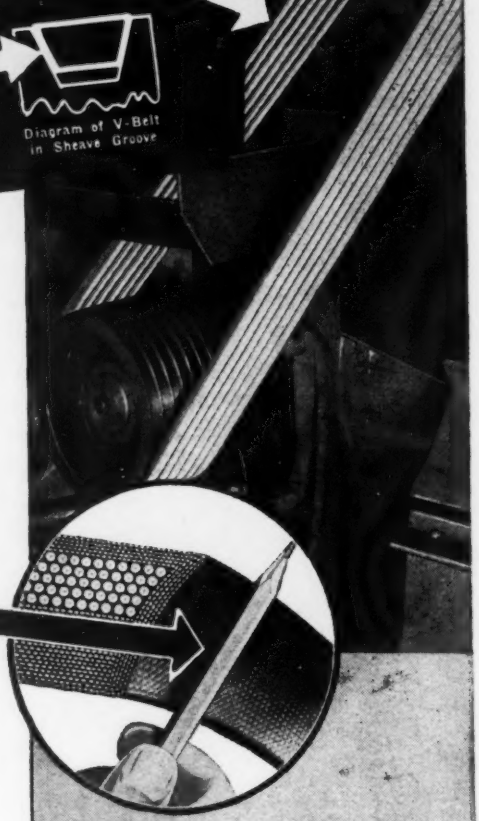
DATED 1947...
Bobbins and spools of Alcoa Aluminum are marks of 1947 thinking in today's textile mills . . . proof that, even in small things, today's mill operators are seeing and seizing opportunities for cutting costs, increasing speeds, smoothing out production . . .
For textile usefulness in mill, machine, or material, no metal can match Alcoa Aluminum's light weight, corrosion-resistance, and ready fabrication. The world's largest fund of aluminum knowledge stands ready to help you apply it. ALUMINUM COMPANY OF AMERICA, 1942 Gulf Building, Pittsburgh 19, Pennsylvania. Sales offices in principal cities.
FOR MILLS, MACHINES, MATERIALS
Are you taking full advantage of aluminum's usefulness?
• To reduce floor loading, machine frames are lightened with Alcoa Aluminum.
• For faster, smoother, higher-precision operation, it's used for moving parts.
• Strong, lightweight, corrosion-resisting cloth rolls, spools, drums cost less to ship.
• In the mill, aluminum paint pigmented with Alcoa Albron Pigment for light, clean walls. Aluminum duct work eliminates drip-stains. Alzak* Aluminum reflectors light working areas efficiently.
*Patented process
ALCOA
FIRST IN ALUMINUM
IN EVERY COMMERCIAL FORM

It's the SIDE of a V-Belt

That GRIPS the Pulley
Picks Up the LOAD
and Really Gets the WEAR!



Every ounce of load a V-Belt carries must *first* be picked up by the *sides* of the belt. Clearly so, because *only* the *sides* come into contact with the pulley! The sides do all the *GRIPPING* on the pulley. They get all the wear against the sheave-groove wall. The sides *pick up* the load. They transmit that load to the belt as a whole. And then, once more, the sides —and the sides *alone*—grip the driven pulley and *deliver* the power to it.

That is why you have always noticed that the sidewall of the ordinary V-Belt is the part that wears out first.

That's Why the CONCAVE SIDE

A GATES PATENT

is ★IMPORTANT to YOU!

Clearly, since the sidewall is the part that wears out first, anything that prolongs the life of the sidewall will lengthen the life of the belt—and that is why the patented Concave Side is important to you.

The simple diagrams on the right show exactly why the ordinary, straight-sided V-Belt gets excessive wear along the *middle* of the sides. They show also why the Patented Concave Side greatly reduces sidewall wear in Gates Vulco Ropes. That is the simple reason why your Gates Vulco Ropes are giving you so much longer service than any straight-sided V-Belts can possibly give.

Straight Sided V-Belt — Fig. 1

How Straight Sided V-Belt Bulges When Bending Around Its Pulley — Fig. 1-A

You can actually feel the bulging of a straight-sided V-Belt by holding the sides between your finger and thumb and then bending the belt. Naturally, this bulging produces excessive wear along the middle of the sidewall as indicated by arrows.

Gates V-Belt with Patented Concave Sidewall — Fig. 2

Showing How Concave Side of Gates V-Belt Straightens to Make Perfect Fit in Sheave Groove When Belt Is Bending Over Pulley — Fig. 2-A

No Bulging against the sides of the sheave groove means that sidewall wear is evenly distributed over the full width of the sidewall—and that means much longer life for the belt!

★More Important NOW That STRONGER Tension Members are Used

Now that Gates *Specialized Research* has resulted in V-Belts having much stronger tension members — tension members of Rayon Cords and Flexible Steel Cables, among others—the sidewall of the belt is often called upon to transmit to the pulley much heavier loads. Naturally, with heavier loading on the sidewall the life-prolonging Concave Side is more important today than ever before!

THE GATES RUBBER COMPANY Denver, U. S. A.

"World's Largest Maker of V-Belts"

475

GATES VULCO ROPE DRIVES

Engineering Offices and Jobber Stocks **IN ALL INDUSTRIAL CENTERS** of the U. S. and 71 Foreign Countries

Gates — THE MARK OF SPECIALIZED RESEARCH

Basic principles of lubrication govern the performance of sleeve bearings. Proper application of those principles and the innate quality of Bunting Bronze Bearings give assurance of successful operation in service. The wide experience of our engineers is at your disposal. THE BUNTING BRASS & BRONZE COMPANY, Toledo 9, Ohio. Branches in Principal Cities.
BRONZE BEARINGS
PRECISION BRONZE BARS
BUSHINGS
64
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Worsted Yarn Coned at High Speed
on the ROTO-CONER*

The highly successful results that Woonsocket Worsted Co. has experienced with the Roto-Coner* suggests that the use of the metal Rotary Traverse greatly broadens the application of this high-speed drum winding machine.

In addition to the 400 mills winding *cotton* yarn on the Roto-Coner*, there are many others using it —equipped with wear-resisting metal roll—for wool, worsted and synthetic staple yarn. The roll—a one-piece driving drum and traverse guide—is responsible for the higher winding speed (550 YPM for paper coning), superior quality of winding (freedom from roll cuts and underwinds), and low maintenance cost (no cams or other fast-wearing parts to grease and replace).

Bulletin 144 describes the Roto-Coner's* many other advantages. Write for a copy.

UNIVERSAL WINDING COMPANY

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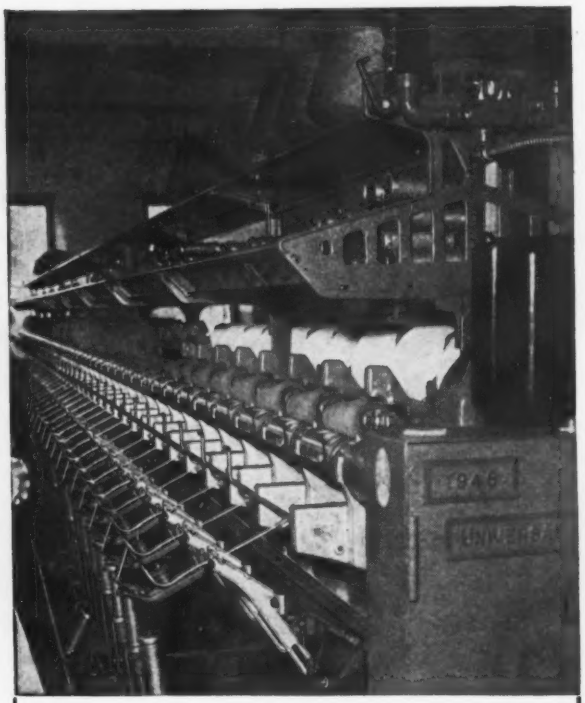
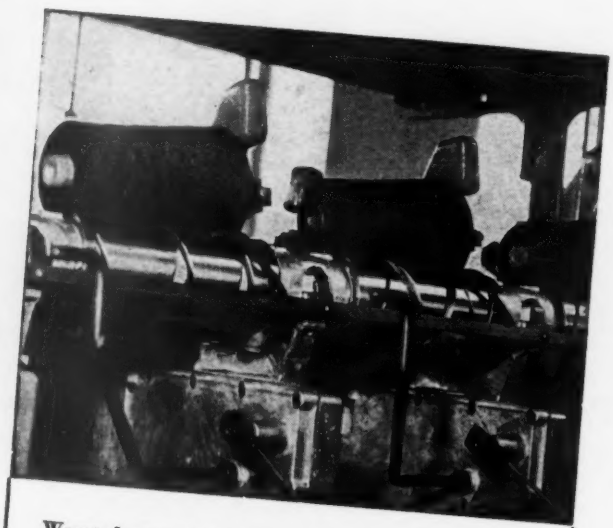


Woonsocket Worsted Co. reports that its Roto-Coners* "have been entirely successful, and we are highly pleased with them."



Worsted yarn being coned on Roto-Coner*. The Rotary Traverses are made of wear-resisting metal, grooved to give proper package formation.

ROTO-CONER LEESONA REG. U.S. PAT. OFF.

Open-Wind Cones for Knitting

WARPING CONES • DYEING PACKAGES • PARALLEL TUBES FOR TWISTING

WORLD LEADERSHIP...

Our Duty and Our Opportunity

CAPITALISM in Europe and the rest of the world is challenged by a real and formidable rival, communism. For capitalism to thrive a reasonable amount of prosperity is essential. Communism uses poverty to advance itself.

Except for the Western Hemisphere, most of the world came out of the war poor. Two years after V-E Day it is still poor. It needs dollars. It needs credit. It needs capital. It needs trade. It needs technical and managerial skills.

If we in America are to help the rest of the world back to its feet, starting it again on the road to peace and a free economy, we should try to supply those needs within the limits of our capacity.

We must not overtax our own strength. For the first requirement of a stable world is a strong United States. But we must accept leadership in international economic recovery—in our own self-interest.

What can the United States do to help men back to prosperity in a world economy which will allow them *freedom and incentive*? There are many things. But here are two of the most important:

1. The United States, through Congress, must determine the pattern and the total of the foreign loans or grants it can afford. We must answer three questions. How much will the new program cost? Can we afford it? Have we the technicians and managers to watch the loans, assuring their fruitful use?
2. We must demonstrate that we do not intend to raise our tariff walls to prohibitive heights when our debtors begin to repay us in goods and services, which is the only practical way they can pay us. Otherwise our loans will become losses.

If the United States is to meet even the minimum requirements of world rehabilitation, Congress eventually must authorize more advances than those to Greece and Turkey. The $400 million for those two countries will not do the over-all job of political and economic defense which we have begun. A minimum of $5 billion, if promptly and wisely applied in eight to ten countries, might suffice. BUT this $5 billion will be on top of approximately $16.8 billion which we have spent or earmarked during the past two years for use abroad, including our full share of the World Bank and Fund. We shall do a faster and more effective job if Congress will thus add up the foreseeable total of our international aid, and, even though the total looks imposingly large, commit us to it, with proper collateral safeguards from the debtor nations.

Congress need not try to foretell all contingencies, like last winter's weather in Britain, and it certainly should not create the impression that nations need only ask for billions to receive them. On the other hand, the war should have taught us the miserable consequences of "too little and too late." The President should have learned that he engenders skepticism by going to Congress with parts of a program, as he has done in the British, Grecian and Turkish loans. Within the limits of our capacity, we must make the decision now to see the whole job through—or throw in the sponge.

In the interest of the debtor nations—as well as in our own interest—the loan program should be hard-boiled. Rehabilitation loans must really rehabilitate. They must produce a state of economic health which will permit the World Bank and private capital to take over the task of financing world recovery—as perhaps can be done today in France and the Low Countries.

The loans, therefore, must be within the limits of our technical and managerial ability to implement them. Without technical help, Greece can not use its loan effectively—to rebuild railroads, clear ports, revive agriculture. Without skilled supervisors, Germany can not be made to pay its way. Money alone won't pull China from the brink of economic chaos.

Our lending calls for more than money. It calls for trained personnel to help the recipients utilize the loans effectively—geologists, construction and sanitary engineers, monetary experts, and management and agricultural specialists.

Loans are necessary but they are only a first step. A long-range program requires the opening of the half-closed doors of world trade—our own door, too.

We will have to get used to the idea that, when our debtors pay us, they must pay us largely in goods and services. Refusal to permit such repayments in the twenties helped start the world depression in the thirties—and the loss of our investments. *Imports do tend to raise living standards, and a two-way trade program need not require us to slash our present tariff rates.*

The complexion of our foreign trade has changed since the war. Our manufacturing capacity has increased and our raw-material self-sufficiency is tending to decline. For example, we probably shall have to continue importing copper and zinc and to increase our prewar dependence on imported lead. We may soon have to depend heavily on imported oil, and—gradually—on a growing volume of iron ore from abroad. Our normal dependence on imports for commodities like rubber, tin and silk will continue.

Our population has gone up 10 million in the last decade, and we now have a $176 billion national income, making room for more imports.

As a result of every nation's recent attempts to make itself secure and self-sufficient by slamming its trade door, a world-wide series of quotas and restrictions is blocking international trade. Even more, government buying and selling threaten to take commerce out of the hands of private traders, placing it in the uninspired care of bureaucratic negotiators.

Our government has taken the lead in calling the conference of 18 nations, now meeting at Geneva, to open as many trade doors as possible. The American delegates will bargain product by product and country by country—all summer, if necessary—for lower tariffs, fewer quotas and a free flow of *private* trade. The task is a long one, and the results are as yet uncertain, but, if success is achieved, an immense opportunity for good works and good earnings will lie before American businessmen.

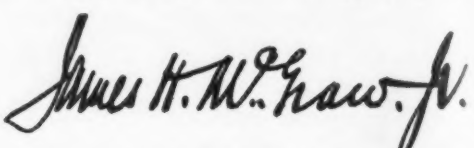
This is no picayunish opportunity. Authoritative estimates put our 1947 exports at $11 billion and our imports at $6 billion. That's substantial. It is greater than the value of all crops grown on our farms ($10½ billion) and exceeds the value of all shipments of industries such as automobiles ($9 billion), textiles ($8 billion) and chemicals ($8 billion).

International trade is vital, not to be shrugged off, not to be kicked around as a football of party politics. Republicans and Democrats agree on a non-partisan foreign *political* policy. They should agree also on a non-partisan foreign *economic* policy. The foreign relations of the United States, political or economic, can no longer be log-rolled hither and yon.

A general program for international recovery, outlined here, will bring its full quota of aches and pains. But lack of a program will produce economic and political troubles on a vast scale; timid retreat will invite economic disaster and war.

By an intelligent, bold and resourceful program, we have a chance to win through to a long peace in the kind of world we want. *Unless America provides the leadership, there can be no such program.* Then Communism merely needs to hang around long enough to pick up the pieces.

Ours is the responsibility and the opportunity.



President McGraw-Hill Publishing Company, Inc.

A NEW ENTERPRISE

Advocacy by the McGraw-Hill Publishing Company, in the accompanying editorial, of an effective world economic policy is not a mere verbal exercise. In the faith that we as a nation shall develop such a policy, this Company, following a trail blazed by leaders in American industry and finance, is expanding its operations overseas.

A newly created McGraw-Hill International Corporation will push forward the frontiers of our technical magazine and book publishing business throughout the world. The new Corporation comprises:

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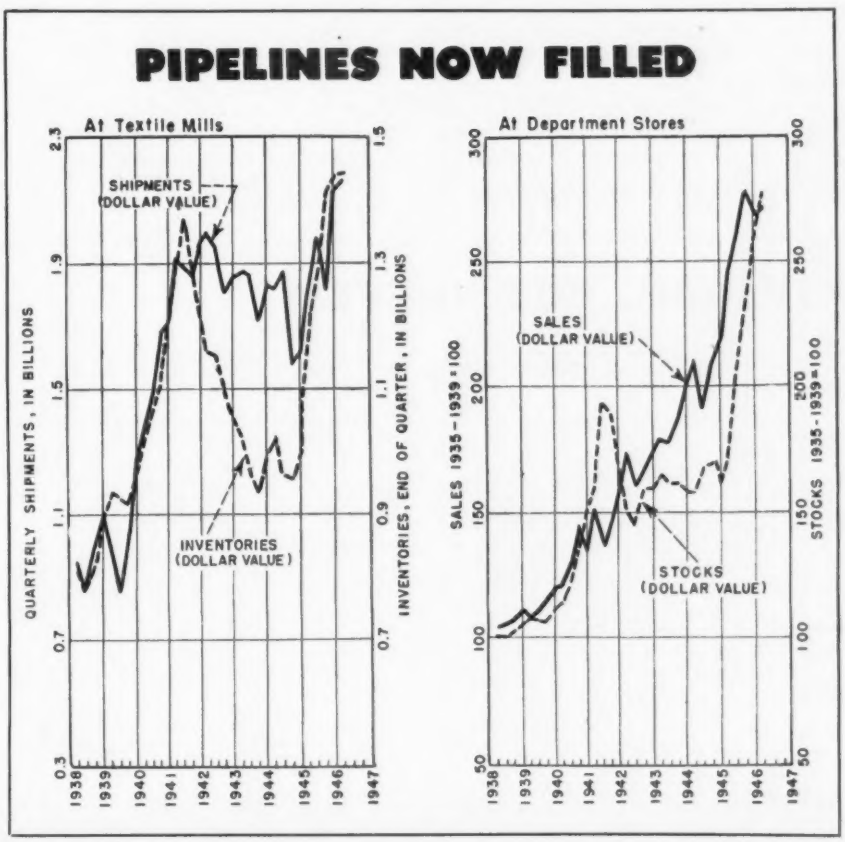
THIS IS THE 58TH OF A SERIES

TEXTILE WORLD
MAY, 1947 · VOL. 97, NO. 5

DIP IN TEXTILES Is Under Way —But It Will Be Mild

HIGHLIGHTS: *Predicted readjustment has started—But even at worst, output will still be high—Rayons at capacity; cottons and wools halfway between prewar and postwar peaks—Prices are on the way down, in most cases more sharply than output—Markets are shifting, holding both promise and threats for mill men—Much depends on over-all business trend, in which a mild dip is also expected—Per capita consumption suggests yardstick for gaging textile trends.*

By **SANFORD PARKER,** *McGraw-Hill Economic Staff*



PRICES AND PRODUCTION of textiles have now definitely begun their expected decline. So far, the readjustment is still in an early phase—most of it lies ahead. And the impact varies from one individual line to another. But there is no mistaking the general shift in the industry's trend, and mill men have little time left to prepare for the blow.

Sharpest warnings have been sounded by prices. Spot quotations on many fabrics like print cloths have been lowered in recent weeks; some cuts have been made in mill-to-retailer prices, like Cannon Mills' reduction on towels last month; a few special finished cotton or rayon goods have been dumped at second hand for less than cost.

Because much of the output has been sold ahead through the third quarter at prices lower than the high spot offerings, forward prices will come down more slowly, less sharply. But hidden price cuts are taking the form of mounting rejections or claims for late delivery or imperfect goods, and increasing demand for better quality.

Most mills are still going full blast. In only one or two branches have mills actually closed down, and even

those now curtailing operations are a minority. But every day sees more instances of production heading down than up, and more firms are joining the retreat all the time.

Soft woolens are the outstanding case of weakness (while worsteds are strong); coarse goods, like auto upholstery or denim for work clothes, are the trouble spots among cottons; rayons have seen no slowdown.

PREDICTION CONFIRMED. Now that the fact of a textile recession replaces the prediction of one made in the February TEXTILE WORLD, new questions move to the fore: How far will the readjustment go? How long will it last? Which lines will it hurt most? What can be done to cushion it?

The over-all answers remain basically unchanged from what they were three months ago. The outlook has been modified only in details.

Both in textiles and the economy at large, the recession will prove milder than in 1920-21 or 1937-38. Productionwise, the wool branch will likely go down most, by about one-fourth; cottons will be next, by about one-tenth; rayons are not likely to be hit at all. Pricewise, cottons will fall harder than will rayons or wools—by perhaps one-fifth versus one-tenth — but uncertainties still surround the raw fibers. Policywise, the change from sellers' to buyers' markets places premiums on the fight for higher mill efficiency, improved quality, tighter inventories, exploitation of exports, and a general shift in production emphasis to scarcer fabrics.

Before going on to examine textile prospects in detail, one must go back to the causes of the recession both for textiles and business in general.

In passing, note that thus far there has been no sharp, wide break in textiles. That may yet happen in the next couple of months. But chances are good for maintaining an orderly comedown in activity and prices.

But the immediate situation—changing, confused, difficult to fix in a few words—makes sense only in terms of the postwar developments in textiles and general business out of which it grew. And the same perspective provides some clues to the future.

TWO YEARS OF CHANGE. In less than two years since the end of the war, the American economy has moved from the upsurge of a boom to the edge of a letdown. Production, once reconverted and freed from strikes, greatly increased. Prices, once freed from controls, rose and soared. Inflationary federal deficits were replaced by surpluses; the most urgent shortages were met; inventories were accumulated and pipelines filled. Demand has weakened; supply has mounted; the value of production has begun to outrun ability and willingness to pay; and the boom has started to shift from "soft" goods like textiles to "hard" goods like automobiles.

The story — and the repercussions — are clear enough for textiles. Output drove up to or beyond prewar peaks; prices soared on to new highs; pipelines were refilled. Then sales of textile end-products began to slack off. Failure of Easter trade was the tipoff on that.

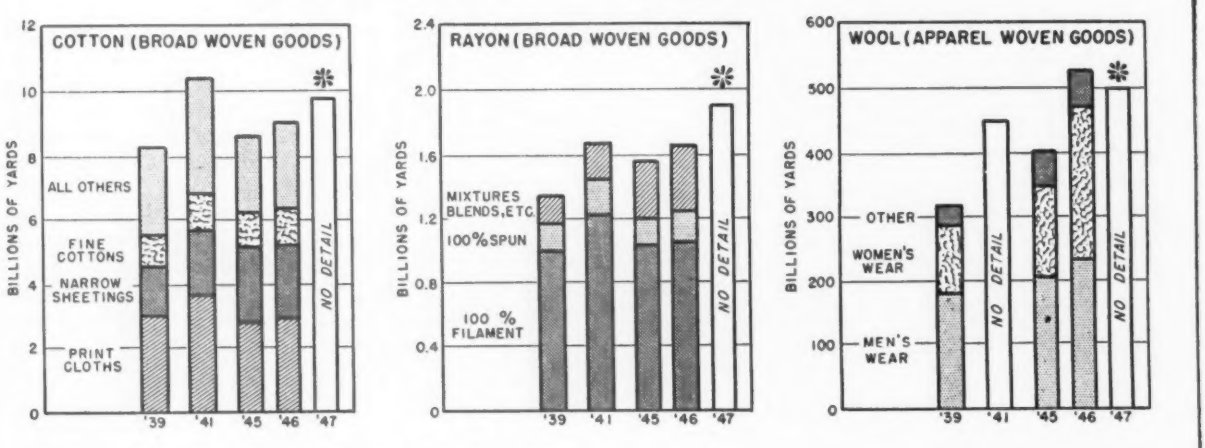
Even dollar volume of apparel and related sales at department stores this year has run lower than a year ago. (Only enlarged sales of appliances and other hard goods lifted store sales totals above 1946.) With prices up, physical units traded have been down sharply. And with store stocks of most "soft" goods rebuilt up to or beyond prewar norms, new orders have slumped. So old-fashioned "seasonal" letdowns have reappeared in coat, suit, dress, and other clothing production for the first time in years.

With pipelines at both mills and stores refilled last year, and sales to consumers now down, where have the textiles been going? The answer is varied. Stocks of goods at jobbers and garment makers (for which statistics are not collected) undoubtedly have choked up. Textile production in the unusual case of soft woolens has been cut. And recently the values of cloth and clothing that show up as dollars of sales or stocks have been marked down.

MILLS AFFECTED LATER. Textile men at all levels were slow to feel the price pressure for two related reasons. One is that the tightening started with consumers and had to be passed back through retailers and cutters. Another is that textiles themselves form a relatively small part of a final product's cost to consumers. Hence, margins in between could be squeezed out first. But now, at last, the heat is on.

How far production will go down along with prices cannot be foretold apart from the national business trend. Most economists expect a recession in prices, production, employment, and incomes before long. One reason is that they see it coming in textiles and apparel trades: declines have a way of snowballing. Other trouble spots are developing in homebuilding, proc-

OUTPUT HIGH, BUT UNEVEN



*FIRST QUARTER, ANNUAL RATE, ESTIMATE BY TEXTILE WORLD
DATA: BUREAU OF CENSUS, 1939–1946

essed foods, various luxury goods. General background consists of high prices, swollen inventories, reduced buying.

Even at today's national income, value of current textile output at recent high prices is out of line with past performance. (This was made clear for cottons, for example, in TEXTILE WORLD's October analysis.) Lower incomes would shrink textile markets further. So the first question is how far general business will drop.

Several factors suggest why the coming decline will be less than that after World War I. Credit is far easier today than in 1920, when banks called loans and helped burst the speculative bubble. Export demand is better sustained this time by government loans. Backed-up demand for autos, homes, and plants is proportionately bigger and so are the accumulated savings to finance them.

What's more, federal spending is now three times as big a factor in the national income as in 1920. Expenses hold up even when national income falls; but tax revenues drop sharply, automatically creating big deficits, which help hold up income and business.

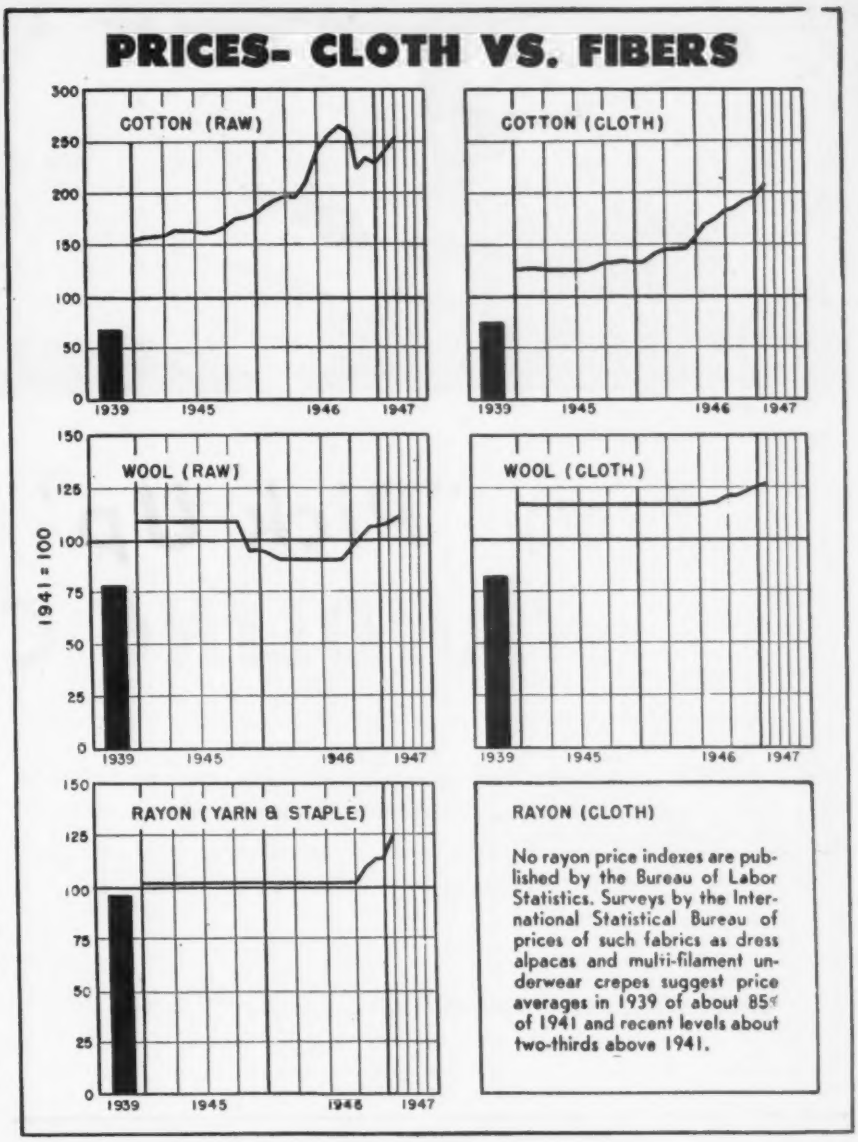
SMALLER DROP. Prices also will not fall so far this time, partly because they went up less on the average than the 150% of 1914-20. Also, federal supports will limit declines in farm prices while union contracts and jobless benefits will buoy wages.

Barring a general business collapse, then, what's in store for textiles? Much of the answer rests with the conundrum of prices. And prices are not entirely in the hands of mill men. Where will costs of raw materials go? What will happen to garment makers' wages—or middlemen's profits?

Raw fiber is most crucial to cottons, and autumn futures now sell about 5¢ a pound less than recent spot prices; they won't go very much lower on account of federal farm-price supports. All the way down to that base, cloth prices might sink a fifth from recent peaks hit in spot markets (but large yardage booked ahead on contract went at a lower price basis than these spot highs).

Moves in cottons naturally would affect rayons. But clearly the rayon rise has been less, so the likely fall will be a good deal less, too. For wool goods much of the future lies with Congress' action on federal sales prices for raw wool.

Unknowns in the price equation down the line from the mills will affect market prospects for output. Nonetheless, some assessment of production possibilities can be made.



RAYON HOLDS. For example, rayon's competitive price strength relative to cotton should assure its holding most of its markets. Mixtures and blends—of spun with filament, or of rayon with other fibers—have weakened of late; their output has soared since prewar days. But ultimate demand for 100% filament yarns, whose supply is up very little, is firm. Total poundage will probably continue to rise with minor interruption, if any.

In cottons, the story is more complex. By lines, coarse goods like ducks and heavy drills have been softening for some time; a few such constructions as percales and napped goods are much more in demand, though formerly fabulous spot prices have been falling. In cottons, too, 1946 production was distorted by price ceilings; and avid demand for scarce print cloths in good part lay behind earlier frantic bidding in spot markets.

However, the shifting market patterns have cut across many lines. Thus, overproduction of soft woolens undermined the rayon blends. So, too, reappearance in volume of combed cotton shirtings undercut spun and blended rayon broadcloths. Hence, some broader-gage market measure is needed for guidance ahead.

Per capita use of cloth may be such an index. At high first-quarter production rates, allowing for export, cotton and rayon output together was about 8 yd. for every American. That figure surpassed even the high 1940 rate when military takings were growing. In previous high years, like 1937 or 1939, output per person was a bit over 7.5 yd. as it was last year. Before the war, those highs were offset by lows of about 5½ yd. of output per person in 1935 and 1938. Yet highs of about 7 yd. seemed to be sustained in the late 'twenties.

(Continued on page 228)

Every "Pick Up" Adds To HANDLING COST

HIGHLIGHTS: *Yarn mill reduces number of "pick ups" of full cones from five to one and saves $220.20 per 100,000 cones—New method uses special truck with table enabling operator to inspect, wrap, and pack cones —Shipping case mounted on special truck eliminates use of yarn box.*

By C. MALLARD BOWDEN, *Southern Editor, TEXTILE WORLD*

TABLE I—COMPARATIVE COSTS

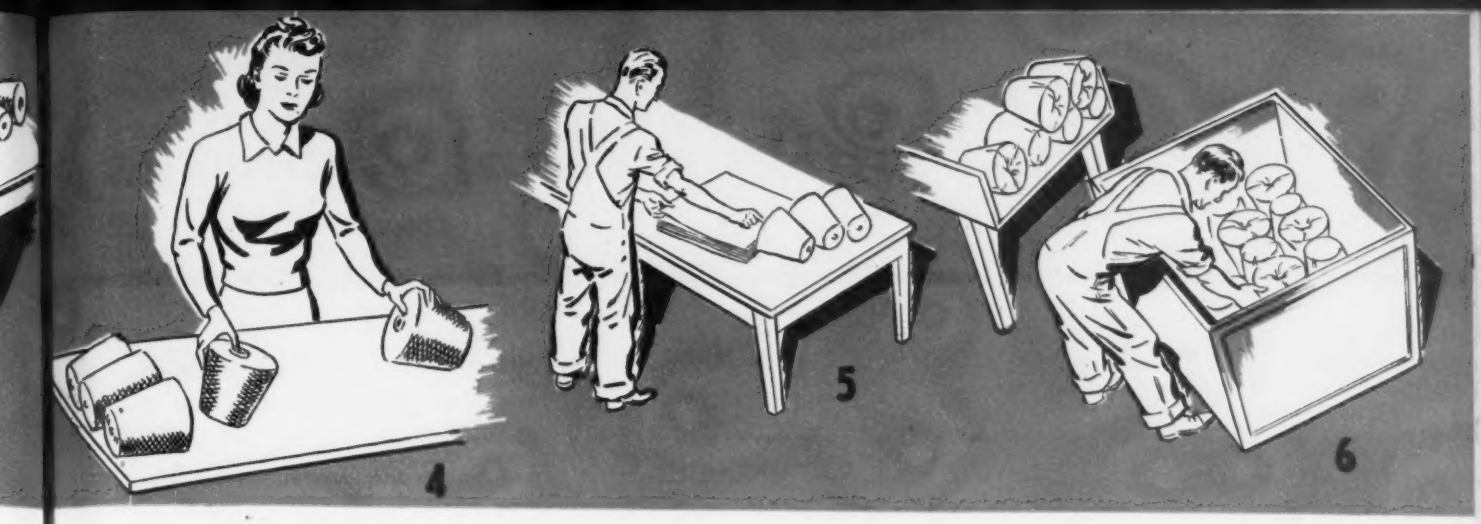
BEFORE	Time per cone	AFTER	Time per cone
1. Stamp operator's ticket	0.07 min.	1A. Stamp operator's ticket	0.07 min.
2. Pick up cone and stack in box	.08 min.		
3. Push box cones to inspection department	.10 min.	2A. Pick up cone from winder, inspect, wrap and pack in shipping case	.16 min.
4. Pick up cones, stack on inspection table	.07 min.		
5. Pick up cone, inspect, aside to table	.05 min.	3A. Shipping case to scales	.12 min.
6. Pick up cone, wrap, aside to table	.08 min.		
7. Pick up cone, stack in shipping case	.05 min.		
TOTAL	0.50 min.	TOTAL	0.35 min.
Cost per 100,000 cones	$734.00		$513.80
Savings per 100,000 cones			$220.20

The costs of the two methods are compared in this analysis. Total time for the old method amounted to 0.50 min. per cone; the new method reduced the time to 0.35 min. per cone. Savings of $220.20 per 100,000 cones were obtained.

PROPER ANALYSIS of the number of "pick up" operations in a mill frequently shows that savings can be made in materials handling without heavy outlays for new equipment. Take the case of the yarn mill which decided sometime ago that there was an excessive number of "pick ups" of cones during winding, inspecting, and shipping. The management had never thought seriously of the problem before, having assumed that cones had to be doffed from the winder, that somebody had to pick them up after the winder operator had placed them on the top of the winder, and that the cones had to be put in a box so that they could be trucked to the inspection and shipping department. After arriving at the inspection department, the yarn was moved from the box to the inspection table by the yarn hauler. When the cones were set upon the table, the inspectors then picked them up, inspected them, and set them down again; later, they were picked up twice more.

Seeing the problem, the mill counted the number of "pick ups." They found that each of the hundreds of thousands of cones was picked up five times after being doffed from the winder. Figs. 2, 3, 4, 5, and 6, illustrate the original five operations involved; as shown in the "before" part of Table I, the cost per 100,000 cones was $734.00.

While there were several simple methods of improving the handling, the solution shown in Figs. 7 and 8



1 *Pick-up troubles began when full cones from the winder were doffed and stamped with the operator's ticket. From this operation on, the mill picked up each cone of yarn five separate times before shipping, as shown in Fig. 2 to 6.*

2 *Under the old method, a yarn hauler took the full cones from the top of the winder, threw them into a box, and pushed the box of yarn several hundred feet to the inspection department. The first "pick up."*

3 *At the inspection department, the yarn hauler took the cones from the yarn box and placed them on an inspection table. The second "pick up."*

4 *The inspector then picked up each cone, inspected it, and stacked it in a pile to her right. This made the third "pick up."*

5 *The wrapper then picked up the cone, wrapped and placed it on another corner of the table. The fourth "pick up."*

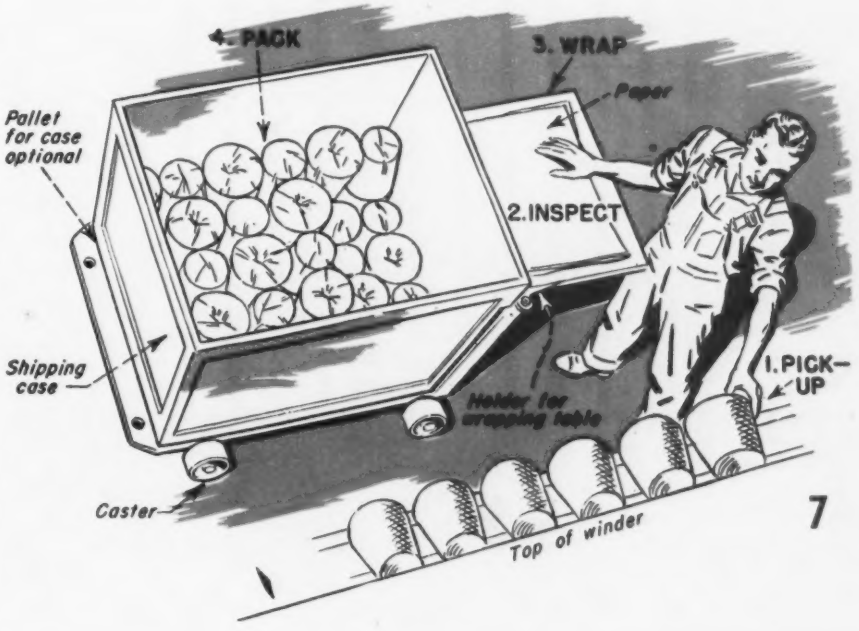
6 *Finally, the cones were packed. The packer picked up each cone and carefully placed it in the shipping case. The fifth "pick up."*

was selected by the mill. The special truck, which has a table for wrapping the cones, enabled the mill to reduce the number of "pick ups" to one. All operations were combined into one and done at the winder itself. The amount of time required per cone was reduced from 0.50 min. to 0.35 min. Costs were cut from $734.00 per 100,000 cones to $513.80, and savings of $220.20 per 100,000 cones were obtained.

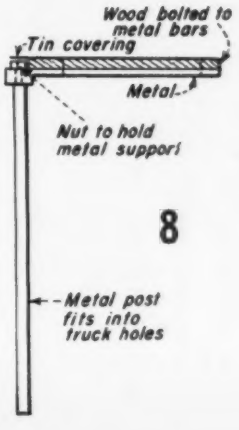
The solution consisted of substituting shipping cases for yarn boxes at the winders and of moving the cases on a special truck. Savings in the actual trucking of cones to the inspection department were not obtained, since shipping had to be done anyway. However, the mill incorporated a method of palletizing the cases so that further improvements in case handling could be made in the future.

One precautionary step was taken to prevent faulty or dishonest inspection. The pick-up inspector remained on the inspecting-shipping department payroll and was thus independent of control from the winder department.

Variations of this solution have occurred in tire-cord mills. On plied-yarn winders which produced extremely heavy cones of tire cord, one mill combined some of the handling operations with doffing. The doffer removed and inspected cones and packed them in shipping cases at the winder. However, the cones which required wrapping were given a second operation.



7 *The new method worked out by the mill reduced the number of "pick ups" from five to one, saved $220.20 in handling costs per 100,000 cones, and combined all operations at the winder itself. The special truck carries a small table on which cones may be wrapped; instead of a yarn box, the inspector uses the shipping case itself.*



8 *The table for wrapping cones is covered with tin for smoothness and is mounted on two vertical rods which fit into holes in the truck.*

Screen-Printing Plant Achieves

Fig. 2

Fig. 3

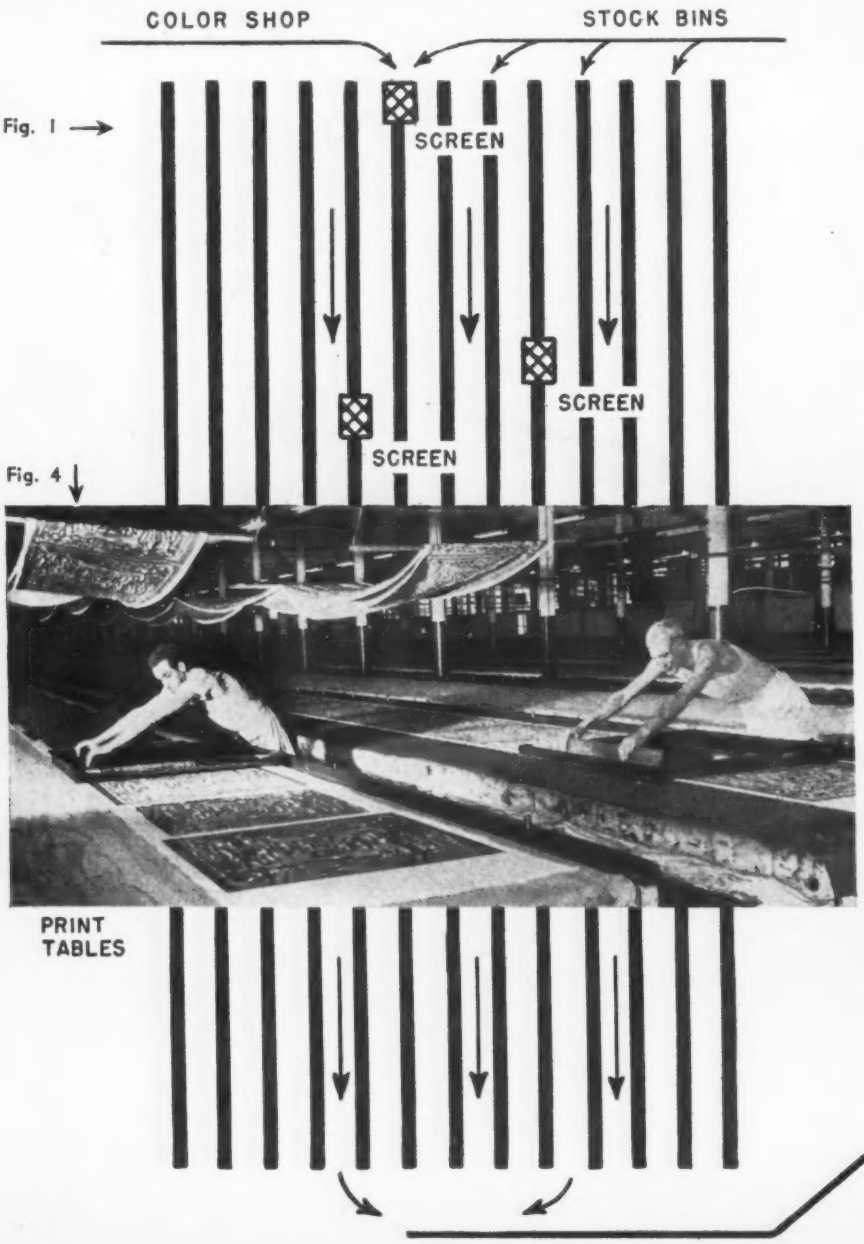
HIGHLIGHTS: *Modern layout and methods applied at plant of Riveredge Printers, Inc.—Flexibility and high-quality production are keynotes of process cycle — Research-minded management plans further improvements.*

By H. S. KNOWLTON
New England Editor, TEXTILE WORLD

A STRAIGHTFORWARD PRODUCTION line from reception of material to the shipment of finished output has been achieved by Riveredge Printers, Inc., Fall River, Mass.

The plant is a screen-printing establishment designed to handle fabrics of most all types and compositions; and, at this writing, production on 50,000 sq. ft. of floor area approximates 12,000 yd. per day. The management plans to enlarge the present operating facilities as business develops. The plant is located in a mill building converted from other uses and has ample room on a second floor for the extension of operations.

PRODUCTION ON SELECTIVE BASIS. Quality production for a discriminating market capable of absorbing a substantial volume of goods is the objective of the company. In order to handle its work rapidly and profitably, the plant has been laid out to permit con-



LINE PRODUCTION

tinuous flow of cloth from stock to shipping department, utilizing at all feasible steps the most advanced designs of equipment.

Fabrics received are checked after delivery by trucks and are stocked in a commodious section at the north end of the plant from which transfer of goods to the printing tables is made as required. Bins with adjustable shelves receive the goods in cartons. The total stock-room capacity is about 5,000 pieces of gray goods. The distance from the nearest bins of the stock-room to the nearer printing tables is only about 15 ft.

All fabrics are given a pilot print test before being placed on the tables for full volume handling. Color absorption and color quality are noted; colors are prepared under the supervision of a textile chemist in a color shop adjacent to the stock-room. The color room has north-side natural lighting and is equipped with fluorescent lamps for work requiring artificial illumination; it is extensively provided with containers of all types and with adequate mixing facilities. Powdered dyestuffs are largely used in color preparation. Laboratory facilities for cloth testing are well provided, and the total area of the color shop is approximately 1,500 sq. ft.

There are 13 tables in the screen-printing room, each 80 yd. long. One table is 50 in. wide, nine tables are each 68 in. wide, and three others are 72 in. wide. Each table is divided into two separate sections in series, and all are equipped with steam piping. The

(Continued on page 200)

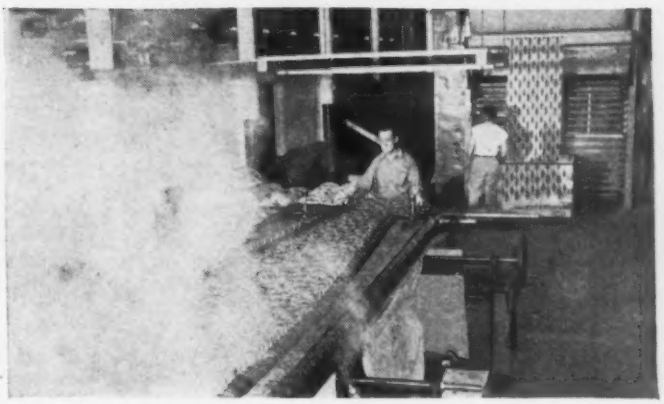


Fig. 1. Schematic diagram of the production facilities at the plant of Riveredge Printers, Inc., illustrates the line-flow layout of equipment used to achieve efficiency in operation and quality of output.

Fig. 2. Color shop is well equipped for preparing the printing pastes required by the plant. Right background shows part of plant laboratory.

Fig. 3. Stock-room bins, with a total capacity of about 5,000 pieces of cloth, are arranged for maximum accessibility to printing room (shown in background).

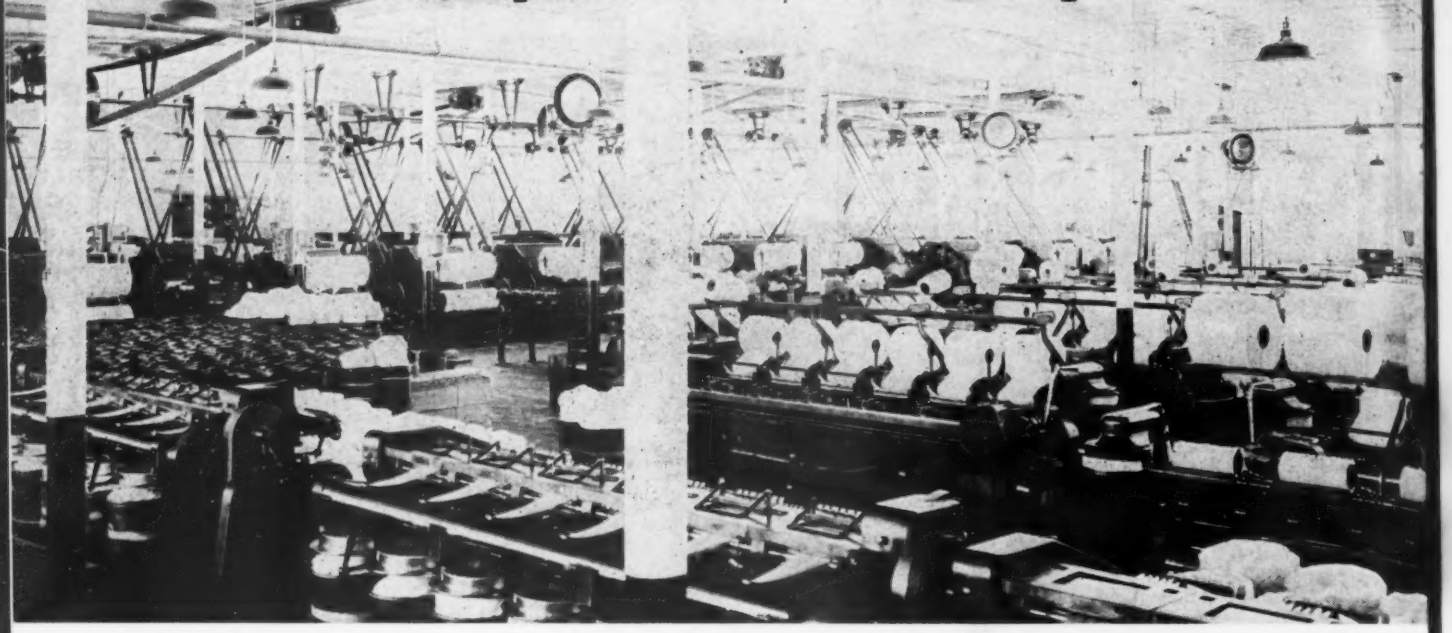
Fig. 4. Thirteen printing tables, each 80 yd. long, permit a production of 12,000 yd. per day. Preliminary drying of printed fabrics is done on wires above tables, as shown.

Fig. 5. Prior to steaming, printed fabric is wound into rolls with paper separators.

Fig. 6. Rolls of cloth are hung on a rack and the whole carriage is moved into the steamer.

Fig. 7. Framing of screen-printed fabric on a clip tenter is the last process prior to packaging for shipment.

THE COTTON COMBER—
A Blueprint to Quality



HIGHLIGHTS: *Irregular sliver weights always follow mixing of varied cottons on comber — Low-production layout with 98 nips per min. and 15% waste gives outstanding combed sliver — Guide to fixing, setting, and overhauling insures maximum comber efficiency.*

By CARL D. WELCH

Superintendent, Union Mills, The American Yarn & Processing Co., Maiden, N. C.

Organization for Preparing Sliver for the Comber.

Machine	Sliver and Lap Weights
Blending Feeder	
Vertical Opener	
#12 Cleaner	
Single-process Kitson picker (2 beaters: 3-blade porcupine and Kirschner)	13 oz. lap
Whitin Card (Medium draft; 165 rpm. cylinder; 4¾ rpm. doffer)	48 gr. sliver
Sliver Lap Machine (20 ends up)	500 gr. sliver
Ribbon Lap Machine (4 laps up)	550 gr. sliver
Nasmith Comber (6 laps up; 98 nips per min.; 15% waste)	48 gr. sliver

Fig. 2. Note that thorough opening, picking, and carding are required in this layout for high-premium combed sliver. Similar preparation will enable the mill to produce first-quality combed sliver on the high-production Saco-Lowell and Whitin combers in the heavier volume for which they were designed. With Interdraft roving, conventional speeder, and long-draft spinning, the yarn range from the above sliver would vary from 30s to 50s.

VARIABLE COTTON MIXES, poor lap and sliver preparation, high card speeds, and neglected combers have been some results of past abnormal production of combed cotton yarns; and at this moment when knitting mills and some combed-yarn mills are curtailing some phases of cotton production until comparative price and fabric quality factors become adjusted, superintendents of combed-yarn mills are making an all-out effort for quality. All production factors from cotton buying to finished yarn will be affected by this drive for premium yarns, and the center of the drive will be the comber itself and such other processes or policies as affect its efficiency.

During this pause in the market, some mills may find that they have merely to reverse the techniques which circumstance forced upon them during and immediately after the war. At one time or another the regular sources of high-grade cotton were unavailable or too costly; and substitute grades or mixes were processed by some mills, with the result that comber settings were either jockeyed back and forth to allow for the cotton variations or were unchanged in spite of sliver and quality variations. When the picker laps were made heavier and card speeds increased on slivers destined for the comber, there was an increase in neps.

For many mills, the issue may be one

Fig. 1. With competitive forces once more in action, combed-yarn mills stake their claim to premium markets on the cotton comber. One combed-yarn-mill superintendent gives the following steps in a program which will return the comber to its maximum efficiency: 1, standardize the cotton being combed as far as possible; 2, give ample cleaning assistance to the comber by thorough processing in opening, picking, and carding; 3, stay within the capacity of the comber in nips per min., weight of lap processed, and so on; 4, train comber fixers to expertness in adjustment, and repair of the comber; 5, teach fixers the "why" of comber settings.

of standard cotton versus mixes, or of high production in departments prior to combing versus conservative preparatory practice. To illustrate, card doffer speeds of 8 to 10 rpm., with their corresponding low percentage of waste, may be replaced by lower doffer speeds and more thorough carding for highest possible quality in the carded sliver. If a mill makes such a change, more waste may be removed at the card and some spinnable fiber may be lost; but these disadvantages are the prices paid for thorough preparation of sliver.

COMBER CANNOT CHANGE COTTON. If high-premium combed yarns are the products for the coming markets, the comber overseer should have the last word in determining the grade and staple of the cotton to be processed for these yarns. If the mill opens a new lot of cotton which has more trash, such as leaf motes or earth stain, than the previous lot, the combers will take out that much more waste. The result is variation in combed sliver, unless the comber overseer is advised sufficiently ahead to reset the combers for the new lot of cotton.

Sliver variation occurs also when the cotton varies appreciably in staple length. A lot of 1 3/32-in. cotton will yield a heavier sliver than a lot of 1 2/32-in. cotton. While the average mill man would not attempt to distinguish between those two cottons, the combed-yarn mill must class in 1/32-in. increments for high-premium products and, moreover, will check and recheck upon both sliver and noils by means of fiber array and other tests.

The first task, therefore, for the combed-yarn mill in its search for superior quality is to standardize the cotton as far as possible. If the mill runs strict middling cotton on one comber setting and layout for a specific quality of yarn, it should run nothing else but strict middling there. If the mill runs low middling or color middling, it should run nothing else. It is most unwise to mix varied cottons

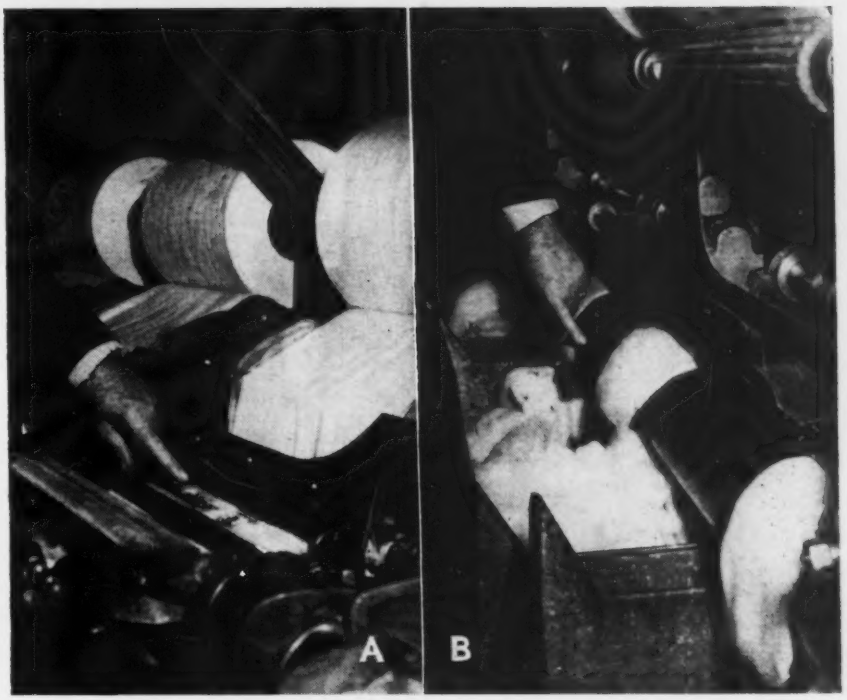


Fig. 3. Bad needles on the half lap or on the top comb will cause the condition shown in A above. Note that the sliver has been broken to show the accumulation of trash between the top comb and half lap. Wrap-ups on the back detaching roll (caused by oil accumulating on roll) will also cause this condition.

In B note the waste which is being removed from this head. The waste is full of good cotton which if good needles were in the half lap or top comb would not be lost.

The first guide to good comber fixing, therefore, is to keep good needles in the half lap and top comb at all times. Other equally important guides are:

1. Replace worn cams and bowls instantly.

2. Inspect brushes often. Replace worn ones. Set the brush to the half lap and maintain this setting.

3. Observe the nipper knife to insure that it closes on the cushion plate at the proper time and with enough tension, so that the cotton lap is not jerked through uncombed by the half lap.

4. Clean lumps from under the nipper knife each shift, and maintain a complete cleaning schedule for other parts of comber.

5. Fans should be inspected regularly to insure their starting simultaneously with the comber to produce a good piecing.

6. Oil the comber regularly, but avoid too much oil on the bottom and top rolls. Otherwise, wrap-ups and black work will result.

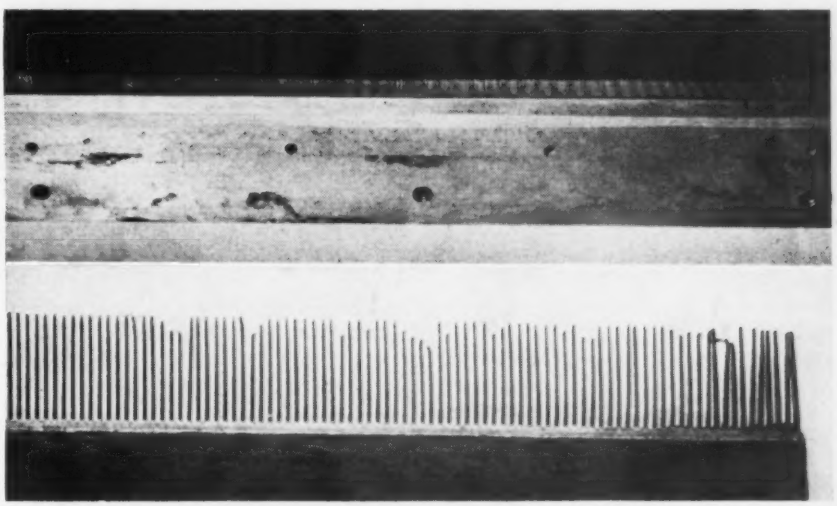


Fig. 4. One defective head on the comber can damage the product. Because defective sliver was showing up, the top comb above was removed from a comber head. Ordinarily it is difficult to spot the faulty needles. But note the lower view, which is a magnification of the needles, and the cause of poor sliver is obvious. Some needles are worn, others are bent; both indicate poor timing and fixing.

Operation	Setting
1. Replace comber half-lap and back steel roll.	Turn to index 2½; gage segment with 2½ gage from steel roll.
2. Set waste chutes just clear of roll.	
3. Put in front steel-roll, small rocker shaft, and detaching-roll caps. Fasten.	
4. Replace nipper frames.	Index 19; set with 10 or 11 step gage.
5. Turn comber 3 or 4 times.	Re-gage all settings.
6. Remove feed-roll brackets, brass selvage guides; clean cushion plate with fine emery and polish with whiting. Replace feed-roll brackets and guides.	
7. Put in feed rolls.	Set feed rolls to jaw of nipper with ¾-in. block.
8. Put on feed-roll springs, top-comb arms, nipper knives, lifting rods and springs; then put on top-comb lifters, spring bars, and feed rod.	Index 33; gage half-lap to cushion plate with 22 gage.
9. Fasten set screws at bottom of frame arms.	Re-gage cushion plate to steel roll setting with 10 or 11 step gage. Index 28; set lifting balls to touch step tightly. Index 29; see that lifting balls are free. Index 19; set nipper knife to open on 15 step gage.
10. Loosen all screws on top comb.	Set with 32 top-comb gage, and 25 or doctor gage.
11. Tighten top-comb screws.	Set leather rolls to top combs, just so that they don't rub. (Use long motion for short-staple cotton; short motion for long staple.) Set nipper frames to come up at 37; if too close and curled sliver results, set at 38.
12. Replace all other parts not requiring setting.	Index 10; set top comb to touch lifters.

Fig. 5. If the comber is a Nasmith or a Whitin Nasmith, the above overhauling schedule and setting instructions will enable the mill to make high-premium combed yarns. Settings are in thousandths of an inch, unless otherwise specified. Before proceeding with the above schedule, the comber fixer should dismantle the comber to its sampsons and clean thoroughly.

in sliver going to the comber, for irregular sliver weights always follow those mixings. But, should the mill desire to change the cotton in a given yarn, it should change completely and then reset the combers for the new cotton.

LIMITS TO CLEANING BY COMBER. Many cases of comber neglect develop from a mistaken idea that the machine is supposed to clean every particle of foreign matter from the cotton. Such a notion temps mills into production excesses and minimum processing in the preparatory departments.

Three processes of opening, including one vertical opener and one horizontal type of cleaner, are necessary. These are usually followed by either a two-beater, one-process picker or a three-beater, one-process picker. A recent addition to opening and picking equipment now being widely used by combed-yarn mills is the air filter or air condenser which takes out dust-laden air and aids in cleaning.

Light picker laps, with close weight tolerances which are tested frequently by the lap meter, and conservative card speeds will enhance the preparation of sliver for the comber.

Conservative preparatory practice eliminates the possibility of passing along the bulk of the cleaning task to the comber. The second step in a vigorous program for quality combed yarns, therefore, calls for the mill to understand that the cotton comber will not take out all the leaf from the cotton no matter how closely it is set and that the comber should have complete assistance from openers, pickers, and cards.

ORGANIZATION FOR COMBED YARNS. Contrary to the usual custom of organizing technical layouts for manufacturing yarns, i.e., starting with the desired yarn and working back to the weight of lap required, the organization for a high-premium combed yarn should begin with the comber itself.

In other words, the capacity of the comber on a given sliver and quality should be known and not exceeded. Whatever adjustments are needed in weights should be made either upon the sliver before combing or upon the rovings and yarn after combing.

The third step for the mill, therefore, should be to find the correct capacity of the comber in nips per min., weight of lap that can be processed, production rate, and range of sliver delivered for a specific quality. When this information is available, the mill can establish its best possible technical layout of organization for specific yarns.

In practice, these organizations vary tremendously and depend also upon the type of other mill equipment, the cotton processed, and so on. However, as a general rule the cleanest and most uniform sliver will be produced under conservative layouts and followed either by a low-production system on the Nasmith comber such as shown in Fig. 2, or a high-production system on the newer combers. For example, with the same careful preparation of sliver before combing, the high-production Saco-Lowell or Whitin combers will produce finished sliver of comparable quality and in the heavier volume for which they were designed. This is true also for combed-yarn mills which have substituted the lap winder for the traditional sliver-lap and ribbon-lap machines.

FIXING AND SETTING. Combed-yarn mills have been as handicapped in obtaining and training fixers as the textile industry in general. It is probably true that many of the comber fixers and supervisors who were elevated to their positions during the war are now relearning the art of setting, operating, maintaining, and overhauling the cotton comber. The comber is what the name implies, and more. It combs the cotton, parallels the fibers to some extent, pieces the combed fibers, and removes short or immature fibers.

As a delicate machine requiring accurate setting and painstaking care and upkeep, the comber is much abused even in normal times. The various actions of the nipper, top comb, rolls, and half-lap have to be timed to the minutest degree. To give the machine a chance to operate for highest quality, the mills should—as step number four—train comber fixers to expertness or employ a comber expert, who knows not only what gage to use and what setting to make but also why the settings are made.

In many cases, a complete overhauling of the comber will be necessary to overcome neppiness or other unclean features in the yarn. During this overhauling, all comber settings should be remade. The comber should be dismantled to the sampsons and cleaned thoroughly. A careful check should be made of all worn cams, pins, gears, and other parts; and faulty parts should be replaced by new ones. If the comber is a Nasmith or a Whitin Nasmith, the machine should be rebuilt and reset as shown in Fig. 5. Mills having other makes of combers should obtain the manufacturer's data on settings and overhauling procedure.

(Continued on page 196)

FINANCING Can Be Fitted To Mill's Circumstances

HIGHLIGHTS: *Replacements and expansions can be paid with outside capital that does not cause interference with management—Flexibility of purchasing permitted—Previous knowledge of needed details is aid in negotiations.*

By E. T. NEVILLE, *Vice President, C.I.T. Corp., New York*

ALL MILL OPERATORS will agree on the wisdom of speedy replacement of equipment which has outlived its usefulness. This article outlines the ways in which a mill can readily obtain the additional capital needed to meet such costs. Arranging an equipment loan, the purposes to which it can be put, and how it can be repaid bring out the important point that any mill interested in increasing production and decreasing operating costs can install modern, labor-saving machinery and equipment to advantage.

The savings effected and the larger earnings made possible through the use of modern machinery and equipment make it feasible to retire the cost largely out of increased earning capacity. This has been the experience of many concerns which have re-equipped their mills and amortized the cost over extended periods of time. Furthermore, the funds with which to meet the cost involved can be borrowed at reasonable rates and on flexible and liberal terms.

The installation of modern machines is one of the most important tasks facing the textile industry if improved manufacturing methods, economical operation, and satisfactory production of textiles is to be maintained. How best to accomplish this objective and meet the cost of making extensive replacements and plant improvements without impairing working capital is a question best answered by the experience of others who have gone through similar situations.

Much of this new equipment must be built to order and the time element is an important factor as firms which are first equipped with the proper machinery have a decided advantage over those which must struggle along with their old equipment. Up-to-date mills can produce more and better textiles and can also do it at a lower cost. This is a tough combination for less fortunate mills to buck when it comes right down to a question of meeting daily competition.

MONEY NEEDED. Many mills have already placed orders with machinery manufacturers—others are planning to do so—but one vital factor must always be reckoned with. . . money with which to complete the purchase! After a businessman has decided what machinery he wants to buy, there remains the question to be answered, "Can I make the purchase without impairing my operating capital?" Very few concerns are in a position to draw too freely on operating funds for capital investments. Unfortunately, there is a limit to everyone's resources and when a situation arises that puts too much strain on current funds, a practical answer to the problem is to use outside capital which can be repaid over a period of time.

To avoid straining working funds and curtailing activities, management heads should arrange a financing program that will permit the loan to be amortized over an extended period. Just how long a time should be allowed for the retirement of the obligation is, in all cases, a matter of judgment and is largely dependent upon future income. One firm may enjoy seasonal advantages, another be handicapped by the same conditions, so that the earning capacity of their equip-

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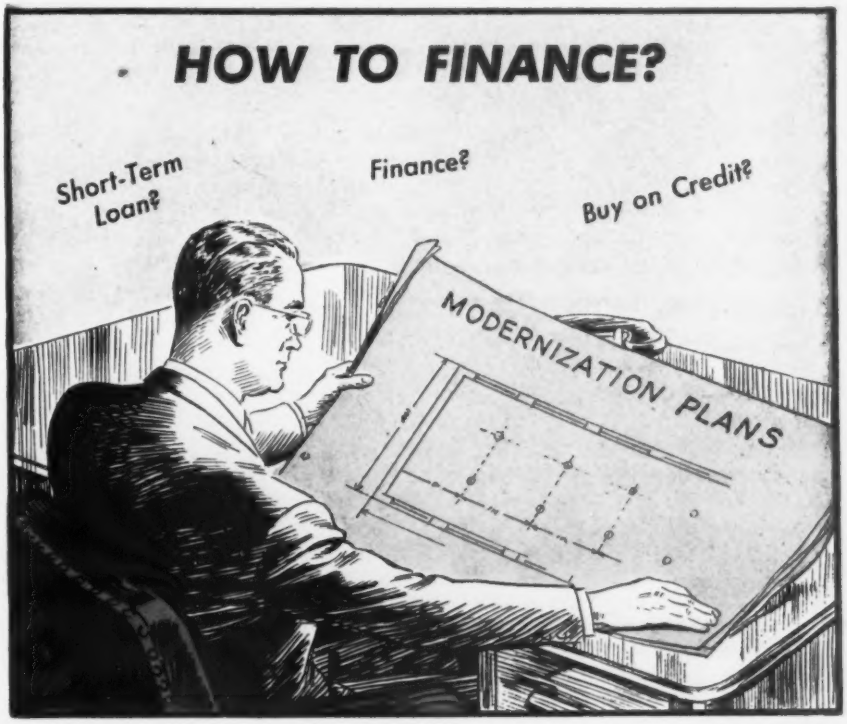


Replacing old equipment with new should permit amortization of financing through higher earnings.

Wool Raw Stock Processed In MODERNIZED DYEHOUSE

By M. H. HUDSON, *Superintendent of Dyeing, Atlanta Woolen Mills*

Fig. 1. The author is shown lowering the loading cross into position in a kier prior to placing stock in machine for dyeing. Note bag of raw stock ready to be loaded. Control panel for all machines is shown on wall at rear.

MODERNIZATION at the Atlanta Woolen Mills, Atlanta, Ga., is carried out under a longe-range program and affects all departments in rotation. A thorough reorganization of the dyehouse was started in the spring of 1946; and, in addition to new auxiliary equipment, five new stainless-steel raw-stock dyeing machines and a new squeeze roll and dryer were installed.

As the dyehouse now operates, the raw stock is brought into the room in 200-lb. bags from the opening and blending room. These bags are opened on the floor directly in front of the dye kiers, and the contents are transferred by hand. Wetting the stock facilitates the packing, and the loading continues until a full charge of from 600 to 750 lb. is in the kier. The wetting down is accomplished by means of the centrifugal pump, an integral part of the machine.

LOADING-CROSS AID. Before the stock goes into the kier, the "loading cross" is placed on the perforated false bottom to facilitate the removal of the stock after the dyeing is completed. This loading cross is constructed of stainless-steel members having chains at four corners to encircle and hold together the completed charge.

After the loading is completed, the machine is filled with water and circulation is started from top to bottom by a centrifugal pump. The chemicals that are necessary to prepare the bath for the color are added to the expansion tank. The color is dissolved in a stainless-steel mixing tank which is placed beside the expansion tank. The dissolved color is transferred to the expansion tank by means of a steam syphon.

A complete installation of dyeing machines consists of kier; mixing tank; expansion tank; centrifugal pump; circulation pipes; quick-acting gate valves; kier lid with perforated follow plate; thermometer; pressure gage; steam coils; and connections for steam, water, and air.

A control panel mounted on the wall behind the machines enables the dyer to start and stop all circulating pumps from a central position. Starting and stopping is accomplished through the use of magnetic relays and push-button controls.

The entire battery consists of one small sample-dyeing machine of 100 lb. capacity; four machines of from 600 to 750 lb. capacity; and one machine of 1,000 lb. capacity. The four 600-lb. machines are generally used in rotation; and the resultant operation, although essentially a batch process, gives a continuous flow of dyed stock to the squeeze rolls and dryer.

STAINLESS-STEEL MACHINES. The dyeing machines are stainless steel (18-8 SMO), which is good insurance against uncontrolled chemical action taking place in the liquor. The machines are easy to clean and reduce maintenance costs to a minimum. The heavy lids, which are bolted securely in place before dyeing is started, are provided with patented perforated follow-plates which facilitate the flow of the dye liquor by following the movement of the stock as it shrinks under dyeing. The follow plates keep the stock in such form that channeling is held to a minimum. They are largely responsible for the even dyeing accomplished by these machines.

Pressure and temperature vary with the fiber being dyed, the formula being used, and the stage of the operation. Both temperature and pressure are manually controlled, but provision is made so that automatic controls can be added when and as desired. All the machines were built by Morton Machine Works, Columbus, Ga.

After the dyeing operation is completed, excess water is forced out of the stock by compressed air. This practice eliminates unnecessary water on the floor and enables the operator

HIGHLIGHTS: *New equipment for raw-stock dyeing installed at Atlanta Woolen Mills—Continuous flow of stock results from alternating use of batch dyers—Compressed air forces excess water from stock before removal from kier.*

to maintain a cleaner, dryer working area. The charge is removed from the kier in a single batch by means of a manually controlled electric hoist travelling on an overhead monorail system of tracks. The hoist is also used to lift and replace the lids of the kiers. On the conveyor, the batch is transferred to the Sargent hopper feed where, still wet, it is passed through the squeeze rolls, thence to the Sturtevant blower which in turn delivers it through a cyclone condenser to the apron of the dryer in a well distributed, even layer.

The pressure applied to the squeeze rolls can be varied but is generally operated at approximately 50 lb. per sq. in., and it is automatically controlled at this point.

The Sargent sectional dryer is continuous in its operation and maintains any desired temperature; it is automatically controlled and has a drying capacity of 1,000 lb. of raw stock per hour. At the delivery end of the dryer, the stock is discharged into the suction pipe of a blower which passes it directly to the Lummus double-bin automatic baling press on the floor above. There it is baled and stored for future use.

PLANNED FOR EXPANSION. The dyehouse has been planned for future expansion. The present arrangement is such that there is plenty of room around the various machines, making maintenance work as well as the ordinary operations easy and convenient. It is felt that adequate working space lightens the operatives' tasks and makes for generally better working conditions.

The floor is of cement finish and is well drained. Frequent flushing allows the floors in front of the machines to be kept in proper condition for the loading operations already described. Cleanliness is essential.

Fluorescent lighting of high intensity has been provided to give ample light throughout the room and a maximum of light at the critical points.

Fig. 2. By using these four 600- to 750-lb. capacity machines in staggered intervals, along with the 1,000-lb. machine on far end, a practically continuous flow of dyed stock is obtained. Lid of No. 3 machine is shown here being lowered into place. Note follow plate suspended below lid.

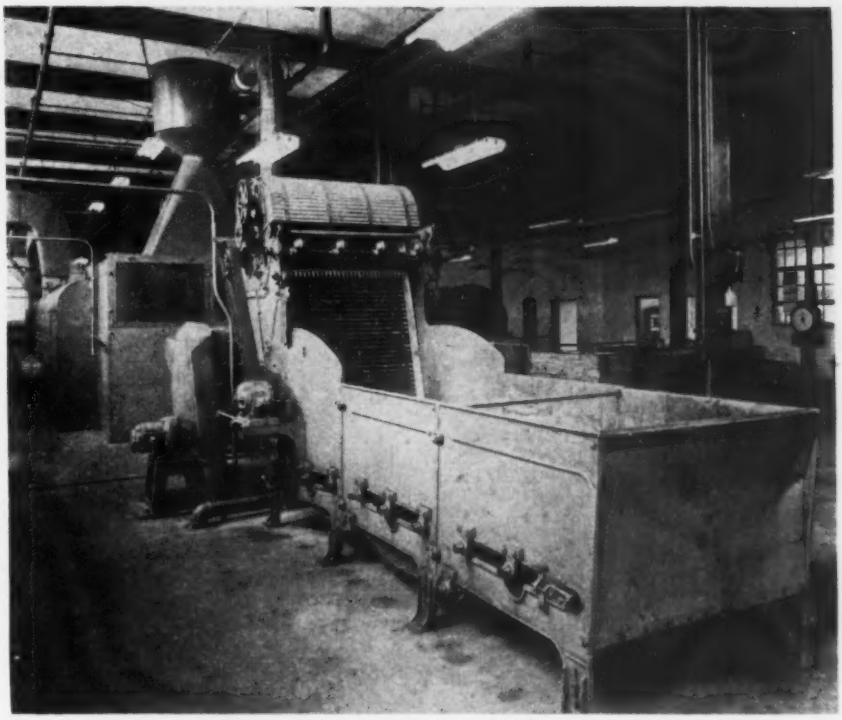
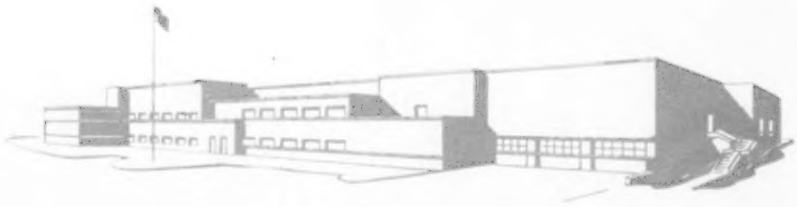


Fig. 3. Dyed stock passes through this Sargent hopper feeder to squeeze rolls, then goes through cyclone condenser and onto apron of Sargent dryer. Row of eight 3-hp. Diehl motors on side of dryer drive air-circulation fans.

A GLASS HOUSE for Duplan Insulates for Nylon Throwing



HIGHLIGHTS: *Protection provided by Foamglas in side walls and roof further aided by aluminum sheathing—Manufacturing area is windowless; office, cafeteria, etc. have Twindo glazing in windows—Maple flooring in plant, asbestos tile elsewhere.*

THERE IS NOW no reason at all for the Duplan Corp. to throw stones, for, to resurrect an ancient wheeze, that firm will soon be living in a glass house. This is not, however, the fragile building that the old adage infers but a particularly durable and well-insulated one. From several sources comes the statement that Duplan's new nylon-throwing plant at Winston-Salem is the first wholly-glass-insulated industrial building.

This interesting example of modern construction was designed by Lacy, Atherton, Wilson & Davis, of Wilkes-Barre, Pa., architects and engineers. John W. Davis, of that firm, supplied most of the data on which the following description of the features of Duplan's Winston-Salem plant is based.

The entire project covers an area of about 16 acres, located at the northeast corner of the intersection of Mineral Springs Road and U. S. Route 52, north of Winston-Salem. The area has been developed for adequate roads, parking, and planting surrounding the plant. The roads and parking areas are all of bituminous paving with concrete curbing.

The building itself, 208½ by 485 ft., covers an overall area of about 100,000 sq. ft. and comprises approximately 140,000 sq. ft. of floor space, divided into a ground floor containing the boiler room, maintenance room, locker-toilet rooms, air-conditioning and refrigeration, cafeteria, general offices, and shipping; and a first floor containing the receiving and manufacturing area, laboratory, class room, and toilets. The topography of the ground was such that the building was readily adaptable to a ground-floor and first-floor layout.

WINDOWLESS MANUFACTURING AREA. The entire manufacturing area of the Duplan building is windowless; but in such areas as general offices, class room, laboratory, and cafeteria where glass areas were deemed advisable, Twindo, the double glass with vacuum between made by Pittsburgh Plate Glass Co., has been used for its properties of permanent insulation.

Due to the necessity for controlled

Photos courtesy of "Engineering News-Record," a McGraw-Hill Publication

1 *Exterior of manufacturing area shows Foamglas over cinder block and girts for support of aluminum sheathing.*

2 *Front of building shows window areas glazed with insulating glass.*

atmosphere in the processing of nylon, air conditioning becomes one of the prime factors; and with this in view, adequate insulation was uppermost in the engineers' minds in making decisions as to the overall type of construction. To carry the high humidities necessary in this building and to eliminate condensation, the building has been completely blanketed with insulation, in this case Foamglas, another Pittsburgh Plate Glass Co. product.

The construction involved concrete foundations and steel frame. A back-up wall of 8-in. cinder block is provided, which becomes the interior facing of the building. Outside of the cinder block and steel frame, and entirely encompassing the side walls and roof of the building, is two inches of Foamglas. This has been used over Galbestos decking with a vapor seal on the roof. The details of the insulation became one of the design problems on the job, and the engineers arranged the construcion to overcome the necessity for any through steel which would carry atmospheric conditions from the outside to the inside of the building, which has previously been a cause of condensation in manufacturing buildings of this type.

The steel deck of the roof is covered with 15-lb. asphalt felt, mopped with steep asphalt on which the 2-in. Foamglas slabs are laid. This is finally surfaced with a 20-year bond, pitch-and-gravel, built-up roofing. The roof itself is supported on open steel joists carried on steel roof trusses, measuring 12 ft. to underside of trusses in mill section.

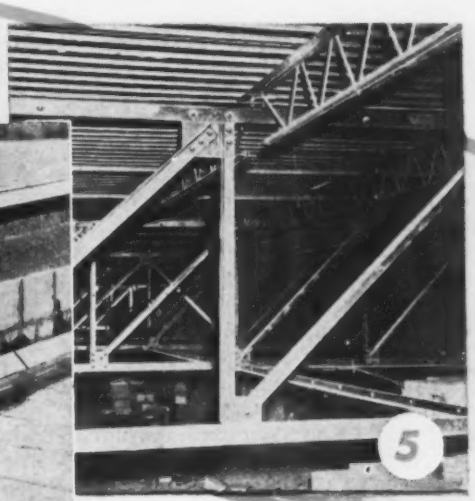
On the exterior of the side-wall insulation were placed a series of angle girts running horizontally around the building. These girts are fastened to anchors placed in the masonry running about half way through the cinder-block wall. These girts become the structural support for 16-gage aluminum sheets which constitute the exterior side-wall facing of the entire building. These sheets have been specified in both fluted and flat form, to attain an architectural effect. In addition to these two types of aluminum sheets, extruded shapes are utilized to accomplish the transition from one to the other, to form sills and heads of windows, and to terminate the fluted sheets and form the coping. Between the wall itself and the exterior aluminum sheathing is a 1¼-in. air space. Interior partitions are of ½-in. insulation board between ⅜-in. asbestos cement.

FLOOR CONSTRUCTION. Hardwood floors have been installed in the manufacturing area, approximately two-thirds of which is over earth and the other third is on structural concrete slabs over the ground floor. In that portion over earth, a 4-in. bituminous stone foundation has been laid; then over the entire area is placed a 1-in. bituminous damp-proofing course; 2-in. wood plank is embedded into the damp-proof course; and then a 1¼-in. maple floor is laid. All other floors are asphalt tile in concrete in laboratory, offices, cafeteria, locker room, and class room. Acoustical ceiling is installed in these latter areas.

The electrical installation for this building utilizes the latest equipment. All substations are of the unit type with secondary switchboards directly connected. The building has five unit sub-stations, each located in its own inclosure and situated on the ground floor. These are all fed from a master switchboard located in the boiler room. Power is brought to the building from the local power company transformer bank by an underground service. For flexibility, a network of man-height tunnels has been carried throughout the unexcavated portions of the building. The general lighting is carried on trolley duct and provides about 45-candle intensity at the machines.

These features, together with a complete conveyor system which is the first of its kind in this type of manufacturing, make this one of the most modern plants for its particular processing that has been built to date. The job is entirely inclosed and work on the inside is progressing; however, the aluminum sheet covering had not been delivered when this was written.

Henry M. Lilly, Jr., is the resident engineer for the Duplan Corp.; Dwight S. Jones is superintendent of construction for Fowler-Jones Construction Co.



3 *Men are laying asphalt felt on roof preparatory to setting Foamglas layer.*

4 *Angle with cornice was rounded off before final roofing was applied.*

5 *These girders and joists support the steel decking of the roof over manufacturing area.*

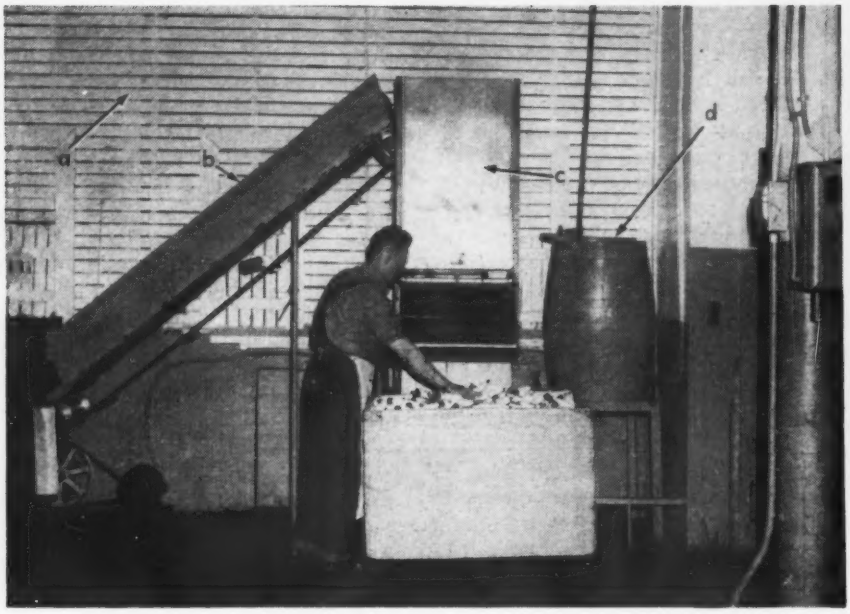


FIG. 1. Filling yarn is dumped into storage bins a from the floor above. An hour before the filling is needed by the weave room, the door of the bin containing the required filling number is raised to permit yarn to fall onto a horizontal conveyor belt. This belt delivers the yarn to inclined conveyor b, which enters it into the machine at point c. Conditioning fluid from barrel d is sprayed on the yarn in the machine.

Fig. 2. This end view of the handling arrangement shows yarn on horizontal conveyor a and inclined conveyor b. The box of conditioned filling that the operator is about to push away from the machine will be aged 1 hr. to permit penetration and partial drying.

TWIST-SETTING Installation Improves Mill's Weaving

HIGHLIGHTS: *Kinky filling and sloughing reduced at Pacolet Mfg. Co., No. 4, New Holland, Ga.—Niagara "Twist-Setter" conditions 200,000 lb. of filling per week at 50% capacity—Mill utilizes gravity and conveyors for handling filling.*

By C. M. BOWDEN, *Southern Editor, TEXTILE WORLD*

IMPROVED WEAVING CONDITIONS of filling yarns have been obtained at Pacolet Mfg. Co. No. 4, New Holland, Ga., by the installation of a Niagara twist-setting machine. Cloth shows considerably less kinky filling, and less sloughing occurs at the weekly start-up.

Operating 56,000 spindles, the mill uses approximately 200,000 lb. of filling per week, in a range of 9s to 14s. The yarn goes into such constructions as drills, twills, and sateens, some of which are to be Sanforized. All numbers of filling are spun with a twist multiplier of 3.75 and wound on 8¾-in. quills.

The arrangement worked out by the mill combines efficient handling methods with conditioning of the filling. Yarn is dumped at dumping chutes along the middle wall on the floor above that on which the conditioning machine is located. These chutes convey the filling into storage bins built of wooden strips along the wall on the floor below, Fig. 1, a. A bin is provided for each number of filling run by the mill. (In Fig. 1, note the bin for 11½s filling at the left.)

BELT CONVEYORS. Directly below the delivery doors of the bins, there is a belt conveyor running parallel with the fronts of the bins, Fig. 2 a. When a box of filling, such as 11½s, is to be conditioned, the conditioning-machine operator raises the sliding door of the

(Continued on page 220)

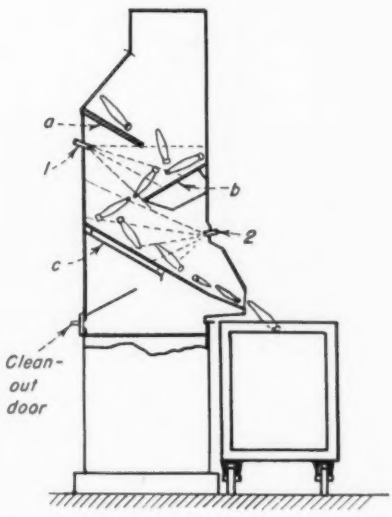


Fig. 3. Yarn from inclined conveyor b, Figs. 1 and 2, is dropped on to baffle a, shown here. As it passes to grill b, double-nozzle spray 1 gives it the first wetting. The second wetting is done by double-nozzle spray 2 as the yarn passes to grill c. Means are provided for cleaning out the machine, seeing into it, and straining and reusing excess conditioning fluid.

New Machines and Improvements Are Highlights of KNITTING EXHIBITION

A WEALTH OF INFORMATION was available to visitors at the 38th Knitting Arts Exhibition in Atlantic City, April 29 to May 2. The number and variety of warp-knitting machines shown or described was much greater than at any previous exhibit.

Exhibitors generally were well pleased with the serious intent of virtually all visitors. Practically all mill men felt that the show was well worth while, but some wished that more machines had been there for inspection. There were quite a few machines exhibited publicly for the first time and many improvements on regular models, as can be seen in the following brief descriptions. In addition to major machines, of course there were many exhibits of accessories, supplies, dyes, chemicals, and yarns.

MACHINES

Abbott Machine Co. exhibited no machines but did have data on its automatic traveling-spindle filling winder and automatic cone winder at its booth.

Ainslie Knitting Machine Co., Inc., featured its improved variable-speed finishing machine for brushing, napping, pile raising, and sueding, as well as its string machine for knitting borders and bindings and its hand-operated Auto-Knitter which can knit true argyle socks.

American Knitting Machine Co. displayed its standard Speedy Slitter and also its improved model equipped with means for automatic feeding. The provision for automatic feeding consists of a positively driven, covered roll at the back of the worktable of the slitter and a self-weighting, friction-driven metal roll placed on top of the covered roll. When power is turned on to drive the machine, the bottom cushioned roll and the circular slitting blade, located in the center of the worktable, are engaged. Positive drive for the cloth is obtained by placing the fabric across the cushioned roll and lowering the top, uncovered roll into contact with the fabric and bottom roll. Three tension bars at the front of the slitter provide a cloth thread-up that exerts sufficient tension to hold the cloth taut in order to permit precision cutting by the revolving circular blade. Approximately 50 ft. per min. of double-border knit goods can be cut with this automatic model of the Speedy Slitter.

American Machine & Metals, Inc., emphasized the importance of the timer-control on the 40-in. center-slung. Tolhurst extractor it exhibited. The timer is especially needed when extracting products which contain a finish.

American Safety Table Co., Inc., showed its line of safety tables for looping and seaming, a collar and cuff turning and pressing machine, and motors for individual stands that it is now making itself. Formerly, this company purchased all motors provided with its safety power tables. All moving parts on the power assemblies of these tables are enclosed and only ball bearings are used. In addition to safer operation, better housekeeping with less cleaning is said to be obtained from the use of these safety tables.

American Textile Machine Corp. operated two of its Holdstich half-hose machines and had a display of the wide variety of patterns which can be knit on the machines. The two machines shown were similar except that one had a plating attachment.

American Viscose Corp., in addition to its yarn and fabric exhibit, showed and operated the table model sample tricot machine which it builds for developing new styles to be knit on its 168-in. Aveco tricot machine.

American Vitos Co., Inc., displayed its hosiery mending machine which is designed to re-knit stocking runs. The patented Vitos needle is said to be extremely light and to be operated by air pulsations which, because they are "elastic," prevent the needle from injuring the fabric. Simple regulation of the air pressure is said to permit the adaptation of the machine to any gage of stocking.

S. Blickman, Inc., featured its fully inclosed stainless-steel dye box, said to reduce the time required for loading, heating, lacing, doffing, and cleaning. Other advantages cited for the use of this machine included reductions in water and in steam costs. Also shown were stainless-steel wet-goods trucks and small wares such as pails, buckets, scoops, dippers, etc. Pails and buckets were shown in two types: (1) with bottoms that had square corners, and (2) with round bottoms.

H. Brinton Co. showed four machines: (1) a 24-in., 32-feed, 18-cut automatic-striping machine; (2) a 14-in., 32-feed, 22-cut, revolving-cylinder, plain-jersey (Style RMP) machine; (3) a 16-in., 16-feed, 702x702-needle, plain-rib machine; and (4) a 5-in., rack-welt ribber equipped with a Fidelity knotter. The automatic striping machine is built in cylinder diameters of 13, 14, 15, 16, 18, 20, 24, and 26 in. On the 24-in. and larger machines, extra sections have been added to accommodate design wheels for knitting a wide range of decorative patterns. Many of these models of machines are now equipped with take-up reels, working in conjunction with the take-ups, so that the knitted fabrics are now doffed from the machines in the form of rolls instead of as loose, unpackaged fabrics.

H. W. Butterworth & Sons Co. showed no machines but did illustrate continuous ranges including the Tube-

Officers Elected

Officers elected at the 43rd annual meeting of the National Association of Hosiery Manufacturers were:
Earl Constantine, president;
T. H. Mueller, treasurer;
Reuben C. Ball, secretary;
Alexander Scott, Jr., chairman of the board;
Hugh M. Grey, vice chairman;
Reid M. Maynard, vice chairman.

Tex system of Tubular Textile Machinery Corp. and Butterworth's ranges for continuous bleaching and for continuous vat dyeing.

Cutting Room Appliances Corp. showed publicly for the first time its new CRA Electromatic knit-goods laying-up machine for tubular-knit fabrics. It features an electronic energy control with which the machine can be stopped at any point from any point. A bank of fluorescent lights is used for examination of the fabric while it is being laid. The CRA Model B automatic spreading machine was also shown.

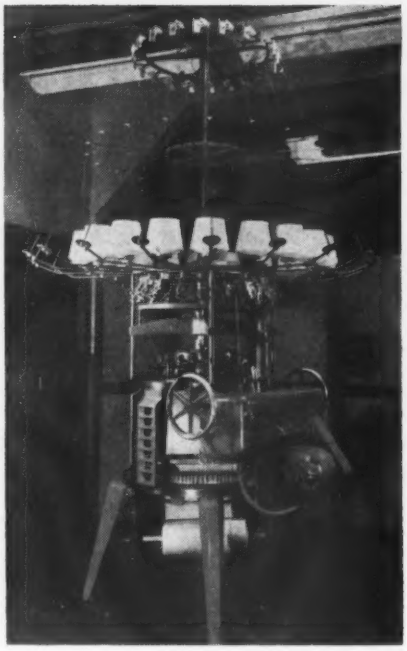
Dubied Machinery Co. displayed two postwar models, the CAL double-lock links-and-links jacquard machine for intarsia work and shaped garments and the BARB double-lock jacquard and transfer machine for the manufacture of full-fashioned knit goods.

Edmos Products Corp. operated three models of its new line of rib-knitting machines. None had previously been exhibited. The machines shown were a 13-in., 13-feed, 14-cut Swiss-rib machine operating at 60 rpm.; a 20-in., 20-feed, 14-cut plain ribber running at 30 rpm.; and a 14-in., 14-feed, 14-cut plain ribber at 40 rpm. It will be noted that the machines have one feed per diameter inch. They utilize multidisk clutches and have gear-driven dials.

Fidelity Machine Co., Inc., featured its 400-needle, electronically controlled hosiery machine knitting women's nylon hosiery. The machine begins knitting the hose at the top and completes it with a seamless leg and foot. Proper yarns for knitting the various parts of the stocking are selected automatically, and the best knitting speeds for the different stocking sections are automatically controlled. Quietness and simplicity of operation are obtained by means of the electronic controls of the knitting components. Changes of yarns and of knitting speeds are made with a minimum of vibration. No abrupt jars or changes of motion are evident in the operation of the machine. Also on display were the company's Universal ribber, equipped with a knot tyer and yarn changer; double-end skein reeler; and Rolande course counter.

J. A. Firsching & Son exhibited a new bias-cutting machine and a new hand laying-up machine. The weight of the latter was said to be greatly decreased thus permitting easier operation. Variable speed drives provide changes for all fabrics, and ball bearings are used throughout.

Foster Machine Co. exhibited many refinements in the three machines it operated during the show. Its Model 75 cone winder was set up especially for nylon with straight-line threading, balanced drop wire, thread-locking lever on the thread guide, ball-bearing roller bail, and type H pineapple attachment. Its Model 76 nylon-sizing machine with a barrel wind attachment was running at 2,500 ft. per min. On Foster's Model 102 cone winder, fabricated steel has replaced many castings, and a size stop motion as well as an emulsion roller attachment was shown.

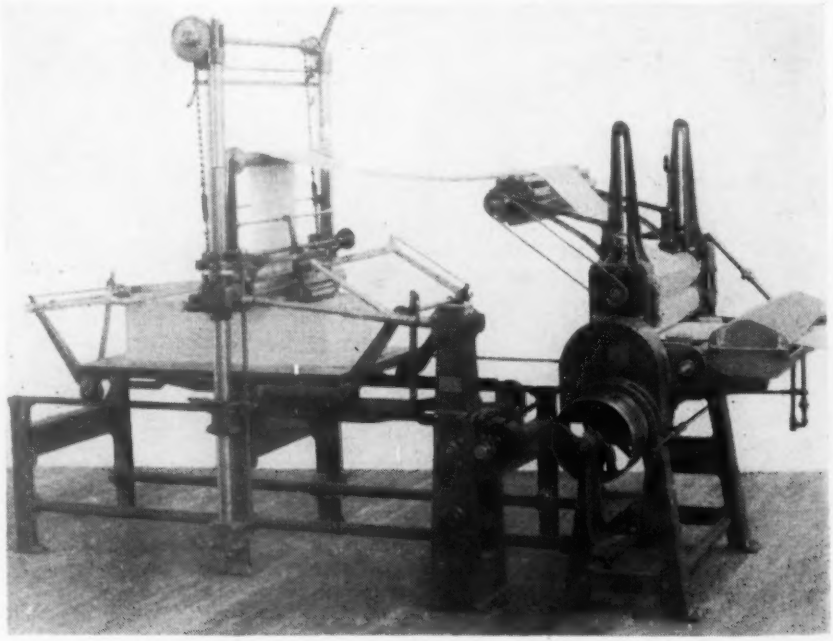


New type AM multifeed ribber shown has 20 feeds for a 20-in. machine (14 cut). It has a belt drive with speed change. (Edmos)

General Hosiery Motor Mend Corp. exhibited the "Vanitas" electric hosiery repair machine which is said to repair and mend women's full-fashioned and circular-knit nylon, rayon, and silk hosiery in the gray and finished.

Grand Rapids Textile Machinery Co. featured dyeing, drying, finishing, cutting, and pressing machinery for various types of knit goods. Emphasis was placed, by means of photographs and descriptive literature, upon two machines never featured heretofore at the Knitting Arts Exhibition. These machines are a continuous, upright finisher and a rotary presser. In the finishing machine, the knit goods are passed over a drum spreader; and live steam is applied. They are then passed over a flat spreader equipped for accurate feeding control, calendered over two steam-heated rolls, and rolled up against a water-cooled roll. The rotary press is said to operate somewhat as a mangle. Garments, put through flat or folded, are subjected to live steam as they enter the machine. They are passed between heated rolls, equipped for pressure adjustment, and onto an apron that delivers them to a folding or boxing table.

The Hemphill Co. displayed knitted samples of varied patterns made by the Banner wrap hosiery machines. Argyles, checks and overplaids, diagonal wrap or plain stripes, fancy and three-color clocks up to 18 wrap colors, and angles up to 180° were produced in samples obtained from a number of knitting mills.



The Universal folding and calendering machine takes the fabric from the dryer, passes it over a spread and steams it on both sides, presses it between two steam-heated calender rolls, cools it by means of a water-cooled roll, and folds it. Any type of knit goods can be finished on this machine. (Grand Rapids)

Alfred Hofmann, Inc., exhibited no machines, but did display plain and brushed fabrics from its Simplex warp knitter. The company stated that it was not yet ready to announce the full-fashioned hosiery machine which it is developing.

Industrial Dryer Corp. operated one of its H-W conditioners during the show. The current model is made of monel on a welded steel frame and is insulated with Fiberglas. Outer covering is Johns-Manville Transite. The operation is controlled with a Bristol instrument.

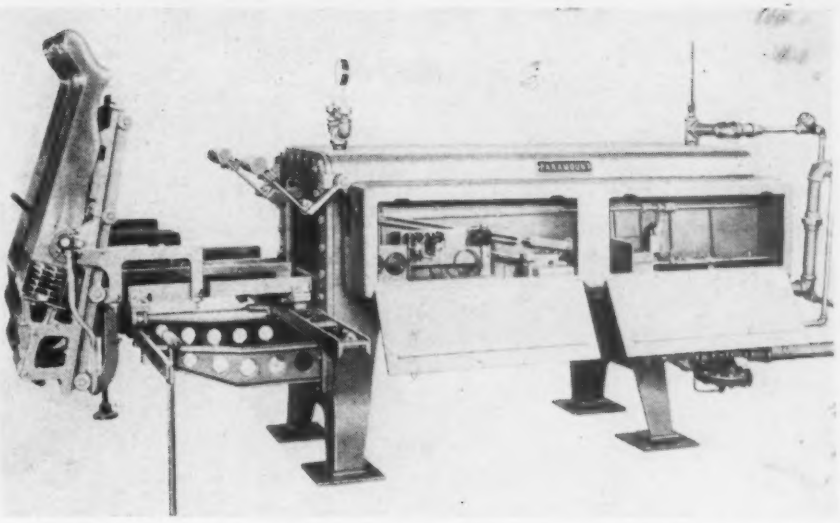
Jacquard Knitting Machine Co., Inc., had the first public showing of its slide-fastener manufacturing machine which produces 600 to 800 yd. of slide fastener per hour from continuously fed tape and bar stock. It has a spacing attachment for making various lengths of slide fasteners. The company also showed for the first time its new style LA plain links-and-links with three-finger stripers. It is being built at present in sizes from 12 to 16 in. and in 6, 7, and 8 cut. A 30-in., 8-cut L.H. links-and-links was also shown, as was the standard TJ machine. The latter was 28-in., 8-cut and was operating at 14 rpm.

Kidde Mfg. Co. and Walter Kidde & Co., Inc., exhibited the Kidde knitter (raschel) and the Kidde tension and density control respectively. The knitter has 18 needles to the inch, two needle bars, and can accommodate up to six beams and feed bars to knit 100 in. of fabric. It features quick adjustment of the needle stroke and of the guide bars. It was learned that Kidde contemplates selling a warper that will have an attachment for running elastic yarn. The Kidde density control utilizes anti-friction ball bearings in its roller bail for nylon. The new Kidde tensometer (one to 100 lb.) was also on display at the joint booth.

Leighton Machine Co. featured circular latch-needle knitting machines. Machines made by this company incorporate the following points: (1) a large, roomy dial outside the knitting point; (2) a machine design that eliminates sharp bends in the yarn, permitting the use of soft-spun yarns; and (3) the capacity for knitting a wide range of yarns on the same machine without changing needle cuts.

Karl Lieberknecht, Inc., exhibited no machines but in its booth had descriptive literature covering its 32-section "Auto-Welt Leg Foot" full-fashioned knitting machine.

Paramount Textile Machinery Co., exhibited the new Paramold 29 Retort for preboarding nylon hosiery, air-cooled tables, and hosiery finishing forms. Features of the Paramold 29 were said to be automatic timing, easily set temperatures, thermostatic controls, safer operation, and time-saving operation. The machine has a self-sealing door and automatic electric control.



The treating timers on Paramount's Paramold 29 preboarding machine are said to start at the instant the pre-selected temperatures are reached. Once timing controls are set, the timer resets automatically. (Paramount)

Philadelphia Metal Drying Form Co. exhibited a new drying-form table on which stocking forms were said to be shorter than standard forms. Special twist in the base of the form resulted in the shorter length forms. The company also showed hosiery envelope fillers, tissue inserters, and a new air-cooled hosiery table which was said to speed drying by decreasing the humidity, add comfort to table operators, and decrease the temperature of the boarding room generally.

Program of Talks

The program of talks at the 10th annual Hosiery Industry Conference was:

"Readjustments in Great Britain," John G. Walton Hosiery Co., Ltd., official representative of the National Hosiery Manufacturers' of Great Britain;

"Manufacturer and Wholesaler-Partners in Distribution," Leo Guzik, executive director, Hosiery Wholesalers National Association, Inc.;

"The Pulse of Today's Retail Market," Lew Hahn, president, National Dry Goods Association;

"The Job Ahead—Winning the Peace," Cecil Brown, commentator, Mutual Broadcasting System;

"The Importance of Cost Controls," George W. Chane, Ernst & Ernst, accountants and auditors;

"Management-Worker Relations," Gordon G. Bowen, partner, McKinsey & Co., management counsultants;

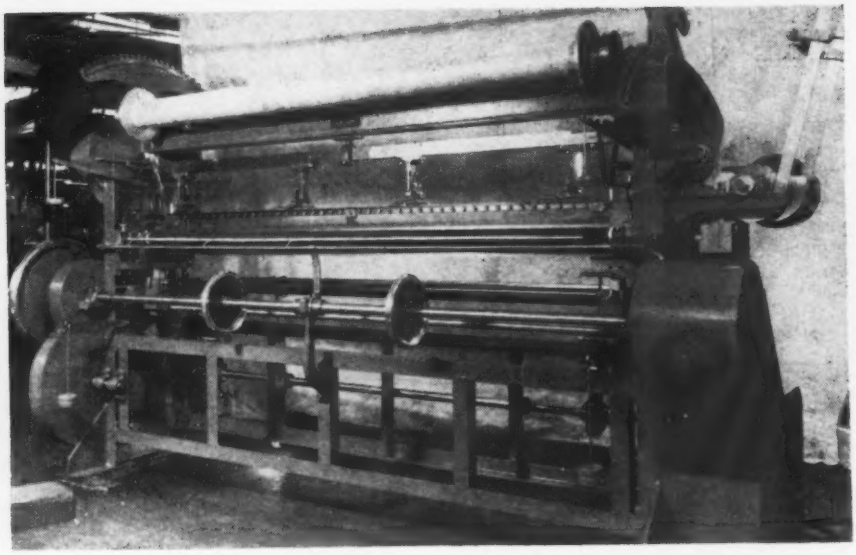
"Constructive Labor Legislation," Hon. Fred A. Hartley, Jr., chairman of committee on education and labor, U. S. House of Representatives;

"Challenges to Private Enterprise," George W. Taylor, professor of industry, University of Pennsylvania.

Proctor & Schwartz, Inc., actually performed production boarding of full-fashioned hosiery during the show. It used its automatic machine which dries, strips, piles, and counts automatically after the operator places the hose on travelling forms. Proctor's new nylon preboarding machine was also shown.

Robert Reiner, Inc., screened a movie of its new Twin Knitter and its sectional warper, and had in operation on the floor its Kay Loom and an 84-in. high-speed tricot machine. (A section of the Reiner magazine creel was also on display.) The Twin Knitter for full-fashioned hosiery is being produced only in 54 gage at present, with finer gages promised later. It operates at 80 courses per minute through knitting and narrowing and can produce a round heel or a stocking which can be completed on a Reiner heeler. Welt turning is semi-automatic. Elements are similar to conventional machines. The Kay Loom can accommodate up to five bars, knits 90 in. wide, and can have filling inserted up to the full width. While on display, the machine was knitting two different cloths; one used the filling attachment.

Robaczynski Machine Corp. of America had a surprise in its entrance into the production of raschel warp-knitting machines. The model Robaczynski announced at the show is greatly simplified and is notable for its open construction. The model shown was 4-bar with two needle beds, but two more bars can be added. It has 18 needles to the inch and is rotated at 150 courses per minute. The machine has two trick plates either one of which is removable for special work. The beam creel is an arc of a circle. Robaczynski also exhibited a string-knitting machine that features interchangeable heads from

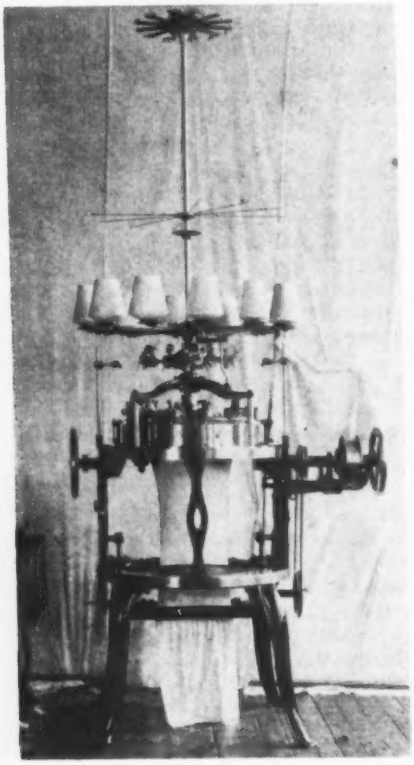


Simplicity of construction features this new raschel knitting machine. (Robaczynski)

3/16 in. to 2½ in. with 3 to 52 needles. It operates at 1,200 rpm. Also shown were a links-and-links knitting machine, a V-type flat machine, and a twin-head border knitting machine.

Schuster Mfg. Co. was to have exhibited a new raschel machine but was unable to do so due to an accident to its show machine enroute.

Scott & Williams, Inc., featured the following six machines: (1) Model K Gussetoe 25-step spiral with automatic inturned welt, Gussetoe and contour heel, used to produce women's seamless hosiery. (2) Komet links-and-links, broad-rib machine. The company builds this machine in all diameters and gages (as fine as 3½ in., 240 needle) for knitting any combination of ribs in tops and legs. Attachments shown on the machine included double feed, plating, striping, draw thread, splicing, and double patterning. (3) Model HH-PW color-in-color machine. This model was described as combining the features of low-cost manufacture with comprehensive single- and multiple-needle, true-wrap patterning in color-in-color and beside-color effects with horizontal stripes. (4) Model HH machine. This machine automatically changes from a rib stitch in the top to a plain stitch for the leg and foot. It is built in ten gages up to 54 gage and up to 5½-in. diameter. (5) Standard Model H machine for knitting all gages, including 70 gage, of infants' and children's anklets, plain or striped half hose, and full-length ribbed hose. (6) Outerwear and underwear machines. Models of automatic rib-body and interlock knitting machines in a wide range of sizes, gages, and number of feeds are made by this company.



Interlock machine knitting tubular ribbed underwear fabric. It is practicable to knit various combinations of ribs with or without automatic shaping. (Scott & Williams)

Smith, Drum & Co. featured the following equipment for dyeing hosiery and yarn: (1) Skein-dyeing machine. The principle upon which this machine operates is said to be that of combining a great flow of liquid with a slight movement of the yarn. The yarn is hung on a hollow, perforated tube over a tank that contains the dye bath. The level of the liquor is about 1 in. below the skeins of yarn. Perforations at the top of the tube on which the skeins are hung permit a heavy upward flow of dye liquor. The force of this flow lifts the yarn off the tube and maintains it in a suspended state. Liquor flows down the skeins and runs back into the bath below. It is said that the entire bath will flow over the yarn once per minute. (2) Rotary dyeing machines, in capacities ranging from 4 to 15 lb. to 500 to 600 lb., are built by this company. Some of the models of these dyeing machines were shown. (3) Beam—and package—dyeing machine. The Clover-Leaf beam—and package—dyeing machine is used to make practicable the dyeing of two, three, or four beams or yarn carriers in the same bath, at the same time, and under the same operating conditions while maintaining the same liquor ratio as required to dye only one beam or yarn carrier. (4) Two-way package-drying machine. This dryer is said to dry from the inside out and the outside in and to reduce considerably the time usually required for drying yarn. (5) A package extractor, designed so that each package is extracted individually, was featured. Each package, wound on a ⅝-in. or 1⅝ in. tube or spring, is placed in an individual compartment inclosed by perforated metal. This arrangement holds the yarn out of contact with the packages on either side of it.

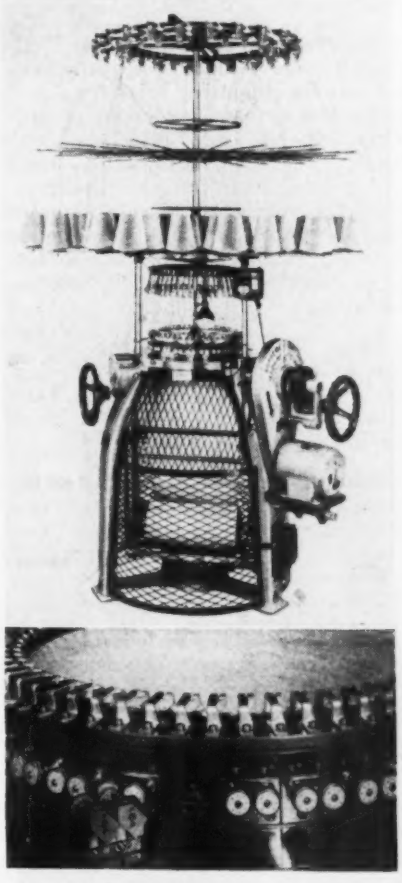
Southern Textile Machinery Co. featured the 40-point Soteo looper complete with chain clipper, work arm and bracket, a sectional looper table with 9-in. fluorescent light, and a Lucite fabric guard to eliminate pulled threads.

Supreme Knitting Machine Co. demonstrated a group of newly engineered high-speed, multiple-feed, circular, latch-needle, sinker-top knitting machines and introduced several new models of machines. The models introduced were: (1) Model ML. This machine was a 20-in., 24-feed, pile-fabric machine for producing fancy rayon loop and terry patterns. Extra equipment included a fall-out detector, fabric yardage counter, and a fabric illuminator. Reported production, 35 yd. per hr. (2) Model 1C, a 26-in., 36-feed machine for knitting overcoating and topcoating fabrics either in all wool or in wool face and cotton backing. Reported production, 20 yd. per hr. (3) Model MJ, in diameters from 8 to 30 in., with feeds up to 64 for the 20-in. and larger machines. This machine is used for knitting jersey fabrics from cotton yarns ranging from 8s to 36s, or from wool, rayon, or silk yarns equivalent in counts to these cotton counts. Reported production, 100 yd. per hr. (4) Model ROF. This machine is described as a "floatless" pattern-wheel machine equipped with three-level unitary pattern wheels to produce oversize pattern fields with no loose floats on the back of the fabric. The machine demonstrated was a 24-in., 32-feed machine. Reported production, 30 yd. per hr.

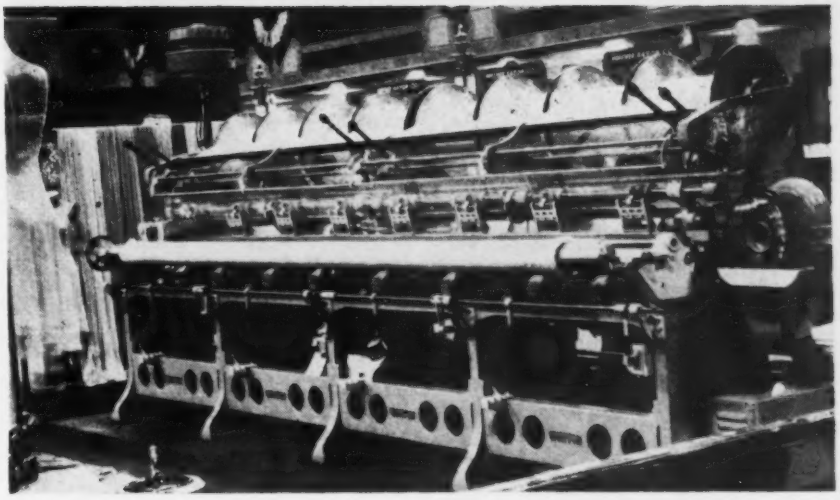
Textile Machine Works did not exhibit their braiding and full-fashioned machines but maintained reception booths at the exhibition.

Textile Trimming & Boarding Machine Co., Inc., demonstrated the loose-end wrapped trimmer, a new loose-end fabric trimmer, assembly finishing table, automatic hosiery turning machines, rubber top trimmer, fluorescent looper light, airflow adjustable looper chair, and looper table.

Tompkins Bros., Inc., featured its B-15 multiple-feed latch-needle machine and its S-1 single-head, spring-needle machine. The B-15 machine is equipped with an electric stop motion, to aid in eliminating imperfections and waste, and a stationary take-up. The take-up is said to assist in inspecting the fabric at any time during the knitting operation. Cylinder sizes range from 9 to 24 in. and gages range up to 42. The S-1 machine is described as a high-speed, spring-needle machine that permits quick changes of feeds and gages to produce a wide variety of fabrics. Interchangeable cylinders range from 16 in. to 35 in., and gages range from 5 to 50.



This Model MJ machine is a 15-in., 48-feed machine for knitting jersey fabrics. It has a production speed reported to be 100 yd. per hr. (Supreme)



The new Model C high-speed tricot machine shown for the first time. (Whitin)

Union Special Machine Co. exhibited machine photographs and literature but no machines, due to the need for machines in plants, according to the company.

Universal Winding Co. demonstrated its No. 250 nylon-sizing machine, its Rotoconer, and its No. 50 precision cone winder. The No. 50 cone winder was set up for both the regular and the pineapple build and had an emulsion attachment. On the Rotoconer, nine different packages were being run simultaneously.

George A. Urlaub & Son., textile consultants, announced the new Parodis multiple-needle automatic stitching and quilting machine. The machine is equipped with two rows of needles with from 47 to 94 needles per row. Decorative designs may be stitched upon cloth which is fed by rollers at the front of the machine. Electric powered, the Parodis machine is said to perform a variety of stitching designs. The Parodis high-speed warp-knitting machine Model P-9600 was also announced. Operated either as a raschel or a high-speed tricot, the machine is said to produce 500 courses per min. and to make dress goods, underwear fabric, shoe cloth, brushed fabric, rubber elastic, flat crepe, etc. When equipped with a double-needle bed, it is said to knit double fabrics such as glove, shoe, and sueded cloth.

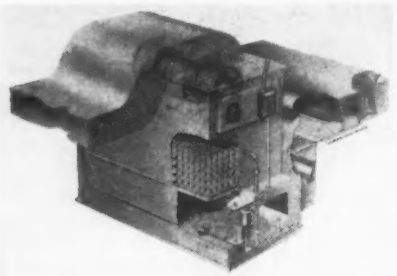
Venango Engineering Co. displayed its pneumatic package and rawstock-dyeing machines equipped with its three-rib and four-rib fluted stainless-steel spindle. These spindles have no joints or crevices in which corrosion is apt to appear. Unobstructed passageways for more efficient flow of the dye liquor are provided. Standard sizes of the dyeing machines range from 60-lb. capacity accommodating 48 packages to 500-lb. capacity accommodating 400 packages. Also featured were the company's rotating dyeing machines, of stainless steel or monel metal, in capacities from 10 to 15 lb. to 200 to 250 lb., eight-compartment machines.

Whitin Machine Works had the first public showing of its improved high speed tricot machine, the Model C. On it, hand wheels are eliminated by the use of a control bar and an electrical inching device. It has a quick stop, nonreversing control. Front guide bars can be easily raised for threading without removing from the machine. Tachometer and rack counter are centrally mounted. Much attention has been paid to bearings and to lubrication. It is reported that the new model has been run as high as 580 courses but that 500 is the operating speed. Whitin displayed a wide range of nylon tricot fabrics and garments.

Wildman Mfg. Co. had descriptive literature of the following machines in its booth. (1) Single-head, single-unit, full-fashioned hosiery machine. Although this machine was designed primarily for knitting hosiery from synthetic yarns, it can also be used for knitting cotton and silk yarns. It is made in 54 and 66 gage, with a 15-in. needle bar. Reported operating speed is about 80 courses per min. (2) Cylinder-needle, revolving-fabric machine, for use with spring-beard or latch needles. This machine is made in a wide range of sizes for knitting fabrics for such garments as underwear, foundation wear, and outerwear. (3) Latch-needle, revolving-cylinder, rib machine in sizes from 7 to 26 in. This machine can be used for making such stitches as plain, tuck, Cardigan, welt, long-loop pile, etc. Fabrics knitted include underwear, dress goods, foundation wear, etc. Interlock machines and small-frame, stationary-fabric machines are also made by this company.

EQUIPMENT AND SUPPLIES

Air-Perme-Ator Mfg. Co. showed, by means of a glass-enclosed model, how its humidifier is able to deliver moist air free from droplets of water —"dry" humidification, the company terms it. The unit cleans the air being circulated (inside, outside, or mixed) and has an arrangement for removing the sediment that results from the cleaning. The system is recommended for conditioning rooms and laboratories as well as manufacturing areas.



Water is bubbled through the vertical wire-mesh tubes shown to achieve "dry" humidification. (Air-Perme-Ator)

Allentown Bobbin Works, Inc., showed a wide variety of spools. Its steaming shaft with provision for a transfer tail was outstanding.

Aluminum Co. of America exhibited aluminum and magnesium products such as tricot beams, spools, cloth rolls, bobbins, and shipping tubes. Typical castings, forgings, tubing, extrusions, and sheet products of light metals were also displayed; and samples were shown which illustrated the various methods of fabrication and assembly, welding, brazing, and finishing.

Joseph Amon, Inc., exhibited moistening equipment and boxes, and hosiery accessories such as knitters' benches, pairing tables, and wood boxes.

Arrow Needle Co. featured latch needles for knitting machines.

Bausch & Lomb Optical Co. exhibited the Ortho-Rater, a new optical instrument which is said to measure employee visual characteristics rapidly and reliably. The Ortho-Rater is said to be one of the elements in Bausch & Lomb's industrial vision service which enables management to determine where employees can best fit into the industrial effort.

Breuer Electric Mfg. Co. displayed portable industrial vacuum cleaners, portable electric blowers, and dust collectors.

Cloverleaf-Freeland Corp. is the name of the company which resulted from the consolidation of the Cloverleaf and Freeland bobbin-manufacturing companies a few weeks ago. The consolidation's exhibit included a variety of bobbins, a cake holder, a self-releasing mandrel for headless twister packages, a nylon pirn cap, and an all-metal take-up shaft.

Charles Cooper Co., Inc., displayed samples of spring-beard and latch needles and samples of fabrics knitted with spring needles on circular rib-knitting machines.

Crawford Mfg. Co., Inc., displayed the new Sureon Protecto device to stop circular knitting machines the instant that current fails, in addition to the postwar Crawford electric stop motion, the Crawford electric needle saver, and other knitting accessories.

John A. Eberly featured various types of needles and sinkers, as well as paints and several knitting-mill accessories.

Essex Specialty Co., Inc., exhibited hosiery forms and a new finishing table which is said to have many new features such as tool trays where extra attachments and tools may be stored. The tray is located behind the forms, and all sizes of tools are within easy access to the operator. New illuminated examining boards in two models were also displayed. When located at the end of each line of knitting machines, the boards are used by the fixer for spot inspection of hosiery flaws. Other models are used in final inspection after boarding.

Ernest A. Feustel, Inc., showed a line of knitting-machine replacement parts such as cams, carriers, aprons, carrier tubes, etc. The firm also specializes in used knitting machinery, particularly German-made machines. Emphasis was placed on a new replaceable tube apron (carrier bracket), for which a patent is pending. When this apron is used, it was said, the carrier rod does not have to be lifted out in order to make a replacement of the tube. It is necessary only to replace the detachable tube itself, independently of the carrier rod.

H. C. Harding, Inc., displayed several lines of needle lubricants and processing compounds. The products featured included: (1) Humdinger needle polisher and preserver; (2) Stay Coat stainless needle oil, developed primarily as an aid in knitting nylon hosiery; (3) T.E.X. nylon softener and lubricant; and (4) Check No. 9 solvent and penetrant, described as a noninflammable and nonstaining solvent for use in cleaning size, grease, oil, etc. from needles, sinkers, and knock-over bits.

Hayes Industries, Inc., had a wide variety of aluminum and magnesium specialties including warper beams, tricot spools, jack spools, cloth rolls, and quills. It demonstrated the use of strain gages in designing products and stated that work was being done on a 26-in. tricot spool.

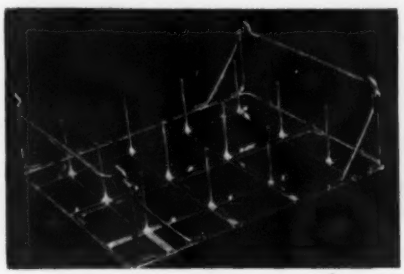
Philip V. Hugues exhibited the Kent scrubbing and waxing machines, Kent electric moppers, and Invincible vacuum cleaners. Of special interest was the electric mopper which is used for scrubbing floors of textile plants. It is said to be converted easily to an industrial vacuum cleaner by simply changing the tanks.

The International Nickel Co., Inc., featured textile applications of corrosion-resistant metals, particularly in dyeing, bleaching, and finishing machinery and equipment. Monel and Inconel, both alloys of nickel, were featured in such applications as hosiery-dyeing machines, skein-dyeing machines, rolls, cabinets, processing boxes, kettles, buckets, dippers, etc. Inconel was said to be a high-strength, corrosion-resistant alloy of nickel and chromium that has been found satisfactory for many uses in finishing.

International Salt Co., Inc., displayed the Lixator, an automatic process for producing brine from rock salt. The Lixator is said to produce clear, filtered, and fully saturated brine. The machine dissolves rock salt without agitation, and filters it. Continuous, self-feeding salt supply may be applied to the machine by means of a storage tank. Varied controls were also exhibited by International Salt Co.

Loyal T. Ives Co., Inc., showed samples of various types of spring-beard needles, sinkers, jacks, and other special parts used in knitting machines.

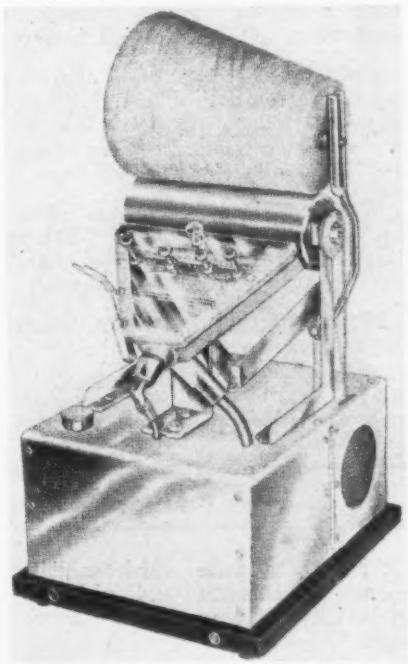
Johnson Engineering & Mfg. Co. displayed its line of equipment for handling bobbins, cones, and other packages. A new self-stacking shell board and a yarn transportation truck were featured, as were stainless-steel non-corroding boards.



Bobbin board is now made of stainless steel instead of cadmium-plated steel. (Johnson)

Kaumagraph Co. exhibited products for use in identifying hosiery. Among the products featured were dry transfers applied by heat for trademarking; decorative transfers for such products as sweat shirts, polo shirts, linen, etc.; seals; labels; and lithographed box wraps.

Kearny Mfg. Co., Inc., demonstrated its new Hygrolit-Surco device for conditioning yarn as it is wound onto a cone at the winder or coner. A conditioning unit is installed at each delivery point of the coner, and the conditioning solution is sprayed directly on the driving drum. The yarn picks up the solution from the drum. Controls are provided for adjusting the percentage of moisture take-up. Each unit is equipped with four screws (see the accompanying photograph) by which the amount of solution sprayed at various sections of the driving drum can be regulated. This arrangement is said to ensure uniform conditioning of the yarn by permitting a heavier spray at the base of the cone, where there is more yarn, than at the top of the cone. The settings of these control screws, once adjusted, need not be changed unless a different moisture distribution is desired, as when a different type of cone is used. An automatic shut-off is provided for stopping the spray of fluid the moment the coner stops. This control feature guards against heavy concentrations of conditioning solution at unwarranted points of the yarn package. Also featured by this company was its new Midget psychrometer for quick determination of of the moisture content of fibers, roving, yarn, and unsized cloth. The midget model, which weighs approximately 10 lb., is similar to the company's standard model.



The Hygrolit-Surco moistening device conditions yarn as it is wound on the coner. The conditioning solution is sprayed onto the driving drum and is picked up by the round of yarn in the cone. Provisions are made for controlling moisture take-up at each unit or at a central pressure valve. The spray stops and starts automatically with the driving drum. (Kearny)

A. Kimball Co. featured the Kimflex hosiery ticket for women's hosiery. The Kimflex ticket carries style, color, size, and price of the hose.

Laconia Needle Co. featured various types of latch needles for knitting machines.

W. T. Lane & Bros., Inc., displayed canvas hosiery trucks and baskets for varied knitting-mill operations.

Lestershire Spool & Mfg. Co. showed a wide variety of products including light-weight jack spools, all-metal bobbins, and transfer steaming bobbins.

Markem Machine Co. featured the new Model 124 cone-sticker printing machine which is hand operated, in addition to its regular models of power machines for printing cone-sticker labels, garment-hanger labels, tags, tickets, and ribbon. Use of an Ionotron which gives off alpha rays is said to eliminate static electricity. Markem displayed other machines for printing box ends, with descriptive details of size, quantity, and style.

Milton Machine Works announced and showed a new light-metal section beam, and exhibited other light-metal products such as tricot beams, and spools.

National Ring Traveler Co. exhibited a variety of spinning and twister travelers for textile mills.

National Vulcanized Fibre Co. showed a wide variety of textile products in which vulcanized fiber and Phenolite, a laminated plastic, were used. The display included such items as shuttles, dye-jig bearings, bobbins, twister-finger inserts, traverse bars, double-twister feed rolls, etc.

The Patent Button Co. showed a wide range of colors and styles of sew-on buttons for knitted outerwear and underwear. Full information as to the laundering qualities of these plastic buttons was available.

E. W. Pike & Co. demonstrated the use of the Flash-O-Lens, a magnifier with a built-in light for inspecting textile fabrics. The magnifier is made in two models: (1) an electric model that operates from either a.c. or d.c. current and (2) a battery model that operates from batteries contained in the handle.

Reliance Electric & Engineering Co. demonstrated the Reliance V-S drive which is said to effect rapidly changing motor speeds by push-button or rheostat control. The V-S drive operates from a.c. circuits and is a completely packaged unit. Its operating speed range is provided by electric or electronic controls. The new Series C line of motors in both a.c. and d.c. were also exhibited.

Reynolds Metals Co. exhibited aluminum and magnesium products such as the Hubbard 21-in. magnesium tricot and section beams, the Paddock aluminum trucks, the Allentown Bobbin Works bobbins. Other aluminum and magnesium products such as spools, cloth rolls, tubes, and Turbo's rack and stocking form were shown.

Royersford Needle Works showed samples of a wide range of spring-beard needles, points, sinkers, and specialties for full-fashioned knitting machines.

Scott Testers, Inc., formerly Henry L. Scott Co., demonstrated a new gear box for the inclined-plane serigraph which was said to combine the features of the former models giving hysteresis and quick return with tensile testing. The new Thy-Mo-Trol development of constant rate of load drive as applied to the conventional pendulum type of textile tester was also exhibited by Scott Testers, Inc. The new electronic drive is actuated by a control attached to the loading head of the tester which varies the speed of the pulling clamp of the tester thus effecting a uniform motion of the pendulum and therefore a uniform rate of load upon the specimen. In conventional drives, the rate of load applied to the specimen is said to be variable because the stretch of the specimen is subtracted from the constant speed of pull of 12 in. $\pm$ 1 in. per min. of the lower clamp.

Sees & Faber Co. displayed varied tools and accessories for the knitting trade.

Sjostrom Electronic Counter Co. Division of AAA Mfg. Co. demonstrated the new electronic pick counter which counted the pickage in over 2 in. of fabric and showed the result on a dial in 30 sec. The machine was said to eliminate labor, eye strain, and uncertainty in fabric-analysis work, to improve quality control, and to aid finishers in determining shrinkage before processing.

Sonoco Products Co. featured paper products such as parallel tubes, cloth-winding cores, double-head spools, perforated Dyetex tubes, filter sleeves, impregnated tubes for various uses, containers, cork cots, Ameroid cots, roving cans, seavenger rolls, and the

new paper tube for the Joanna adapter.

Stampagraph Co., Inc., featured hot-iron hosiery transfers in one and two colors, two-color transfers for sport shirts, children's wear, etc.

Standard Pressed Steel Co. showed its "Unbrako" self-locking set screws and other items it manufactures for use in textile mills.

Stop-Motion Devices Corp. exhibited the Wesco electric stop motions and special attachments: electric needle protectors, electric hole and press-off detectors, spring-needle detectors, running knot and stub detectors, and Wesco electric stop motions on underwear, outerwear, and hosiery machines.

Synthane Corp. featured laminated phenolic materials in the form of sheets, rods, and tubes and also textile products fabricated from these materials.

G. H. Tennant Co. exhibited dry-cleaning equipment for reconditioning and maintaining knitting and other textile-mill floors. The Revo-tool accessory was demonstrated to level old, frayed floors, and Tennant floor hardeners which are said to seal top wood-fiber and to provide bright, hard surfaces were displayed. A new lacquer-resin type of paint for coating oily surfaces, and designed especially for painting under knitting machinery, was displayed.

The Torrington Co. featured latch needles, sewing-machine needles, full-fashioned knitting-machine needles, sinkers, and related machine parts.

Tray Ware, Inc., displayed the plastic Sok Dryer in all sizes of men's, women's, and children's hosiery. The design of the Sok Dryer is said to permit the drying of hose while maintaining the correct size.

E. W. Twitchell, Inc., Packaging Div., featured box wraps, plain and printed cellophane envelopes; hosiery inserts, scotch tape, and specially designed packagings for use by the textile industry.

United States Testing Co. featured its Universal hosiery-fitting measure forms. Other products shown included leg- and foot-measuring devices and run-resistance meters. The Universal measuring system consists of three forms comprising three width and length sizes. The dimensions of the forms were determined by 10,000 actual leg measurements; and the forms have been built so that they can accurately measure the stretch and recoverability of a stocking at the thigh, knee, and instep.

Veeder-Root, Inc., displayed a variety of revolution, ratchet, and measuring counters for the knitting industry.

Walton Labortories, Inc., operated both industrial and laboratory models of its humidifiers during the show. The laboratory model has a variety of interchangeable domes and a vaporizing output of about 1½ pt. per hr. The industrial model vaporizes about 1 gal. of water per hour and is equipped with a directional dome, if desired.

DYES AND CHEMICALS

Carolina Aniline & Extract Co., showed its FF cleanser, which is used for cleaning full-fashioned or seamless machines when nylon yarn is used, and Humiclean, which is used in air-conditioning systems for the prevention of algae and slime.

E. F. Drew & Co., Inc., displayed samples of its line of synthesized esters, fiber lubricants, detergents, soaps, and yarn conditioners for throwsters and knitters.

W. F. Fancourt & Co. stressed its one-product resin finish for nylon hosiery in its line of materials for hosiery and other knit goods. It also showed scouring compounds developed especially for nylon.

Louis Hirsch Textile Machines, Inc., represented numerous manufactures: B. & E., Inc., synthetic detergents; Speedylectric Engineering Co., electric boiler; The Bryton Co., organic detergents; and Cidega Machine Shop, Inc., the Cidega knitting loom. The knitting machine and boiler were not shown.

Indianapolis Chemical Co., Inc., featured its B-1 cleaning solution and B-1X trough solution. The cleaning solution is recommended as an aid in softening and removing size and other gummy deposits that might accumulate around the needles of full-fashioned knitting machines. The trough solution is described as a lubricant, to be used with water, that will aid in reducing wear on carrier tubes and in preventing pulled threads and press-offs.

Kali Mfg. Co. featured three products: (1) Kalpinols, for use in troughs to wet out nylon prior to knitting; (a) Hydroxy hand cream, used by knitters and other employees who handle nylon; and (3) Kali Needle Kleaner, used to clean needles on full-fashioned hosiery machines.

Laurel Soap Mfg. Co., Inc., featured soaps, oils, and finishing compounds for use by the textile industry. Among the special finishing compounds made by this company are water repellents, mildew-proofing agents, flameproofing compounds, etc. Emphasis was placed on Hydrocop and 3B Softener, emulsions used for softening and lubricating dyed and bleached knitting yarns.

Onyx Oil & Chemical Co. displayed a wide range of products used in dyeing and finishing operations. The main feature of the exhibit was the company's Eternalure D-15, described as a one-treatment resin finish for nylon and rayon hosiery. Other finishing compounds shown included: (1) the Neutronyx series of nonionic, surface-active agents valuable for their detergent, emulsifying, and dispersing characteristics; and (2) the Repel-O-Tex series of water-repellent compounds.

Rex Hosiery Finishers, Inc., featured its hosiery-finishing process. A moving picture in color showed the various steps through which hosiery is put to obtain the desired finish.

Scholler Brothers, Inc., featured soaps, softeners, sulphonated oils, wetting agents, scouring compounds, and finishing compounds. Several samples of fabrics on which these products were used were on display. Also shown were samples of shrink-resistant woolens and wool mixtures treated with a chlorination process in which buffers were used to prevent improper chlorination. The main feature of this exhibit was Dura Beau S. M., the company's new synthetic-resin finish for nylon hosiery.

Specialty Products Co. featured the new nylon dyes and dyeing technique of Hickory Specialty Co., Inc. Its new nylon colors are called Pronyl and have excellent wash fastness.

Warwick Chemical Co. had an array of textile chemicals but featured Dur-Lana treated wool socks that were protected against shrinkage.

Wyandotte Chemicals Corp. had on display samples of four of its textile products: Textile White Ash, Huron Alkali, Textile Soda, and K.B.X. (a concentrated soda ash).

YARNS

Among the firms which exhibited yarns of various fibers and finishes and in various packages were the following:

Aberfoyle Mfg. Co.

Adelphia Textile Co.

Ankokas Dyeing & Processing Co.

Atlantic Rayon Corp.

Franklin Process Co.

United States Rubber Co.

1950-1960

The Twentieth Century Fund, a privately-endowed research foundation, has just completed a monumental 875-page work called "America's Needs and Resources." In it is presented a detailed preview of what economic life in the U. S. A. during the 1950-60 decade will be like if we succeed in maintaining high-level employment. From the findings of the Twentieth Century Fund survey, the McGraw-Hill Department of Economics has prepared this synopsis, which highlights points of interest to readers of this magazine.

MORE PEOPLE WORKING . . .

EACH PRODUCING MORE . . .

CAN TURN OUT ENOUGH GOODS AND SERVICES . . .

FOR CONSUMERS, CAPITAL INVESTMENT AND GOVERNMENT

WITH THE RESOURCES AVAILABLE . . .

TO MEET ALMOST ALL OUR NEEDS

POPULATION

A nation's wealth depends more than anything else on the size and vigor of its population. Much of the increase in U. S. production during the past hundred years is a result of a rapid growth in population. This growth supplied manpower for farms and factories and provided an expanding market for consumer goods and services.

MORE PEOPLE WORKING . .

Growth was the outstanding fact about population before 1930. The birth rate was almost double the death rate and there was a heavy flow of immigrants. Between 1900 and 1930, the population increase averaged 15 million each decade. Immigration contributed a third of the increase.

But this trend was checked by the depression 30's which stemmed the flood of immigrants and cut the birth rate by forcing postponement of many marriages. As a result, fewer than 9 million persons were added to the population between 1930 and 1940. This was an important factor in prolonging the depression because it slowed the growth of consumer markets.

WARTIME MARRIAGE BOOM

War and postwar conditions have brought a boom in marriages. They have exceeded normal by more than 1,500,000 since 1940. There will be more newly-married couples in 1950 than ever before and the birth rate may be roughly 10% higher than in the early 1930's. So the 20th Century Fund looks for an increase of 12 million in total population between 1940 and 1950 and a further increase of 10 million in the 1950's.

This will mean a faster-growing market for homes, autos, food, clothing, and other consumer items than we had in the 1930's. It will mean crowded schools and more people seeking jobs.

There are four major population trends which will affect markets in the 1950's:

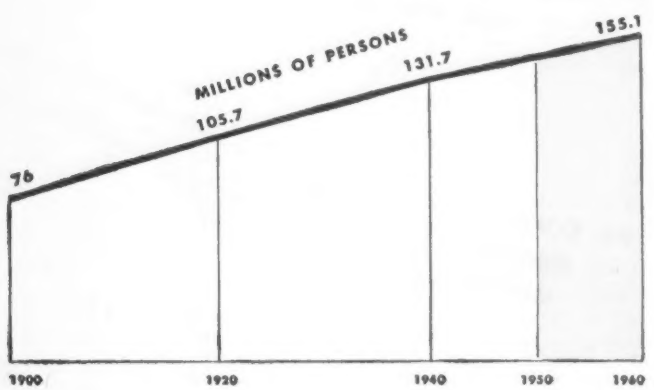
1. The number of families will continue to increase more rapidly than the number of people as families grow smaller. This is significant because the market for housing, appliances, and many other things depends more on the number of families than on the number of people.

2. Our population will be getting older. But it will not be getting less productive because the proportion of the population between the ages of 20 and 60 will be higher than in past decades. Still, the most striking increase will take place in the number of people over 60—from 14 million in 1940 to more than 20 million in 1960. This will bring greater demand for medical services and social security. An important cause of this trend is our success in controlling communicable disease. The following table shows how the death rate from selected causes has changed since 1900.

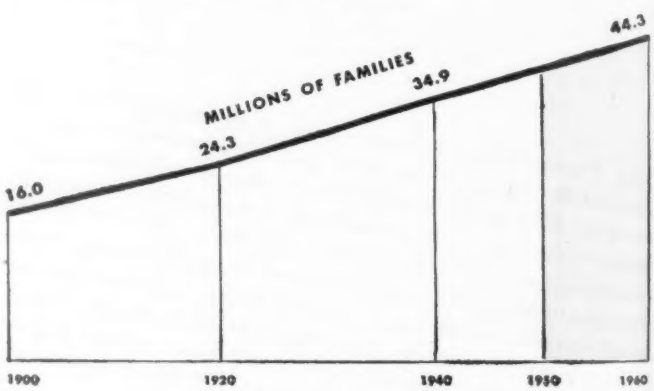
Death Rate Per 100,000 Persons

	1942	*1900*
Diseases of heart	295	137
Cancer and other malignant tumors	122	64
Influenza	56	202
Tuberculosis	43	194
Diarrhea and enteritis	9	143
Whooping cough	2	12
Diphtheria	1	40
Measles	1	13
Typhoid and paratyphoid fever	0.5	31
Scarlet fever	0.3	10
Other	505.2	873
	1035.0	1719

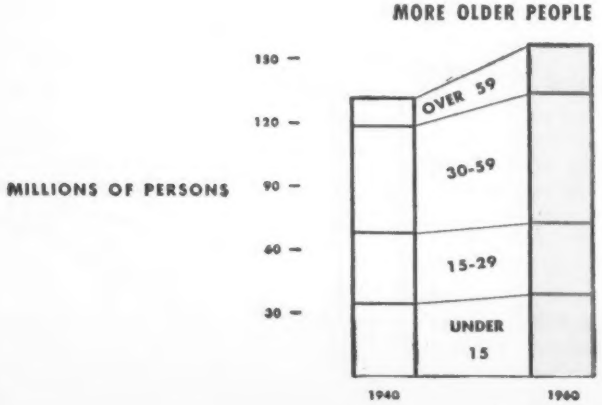
TWICE AS MANY PEOPLE



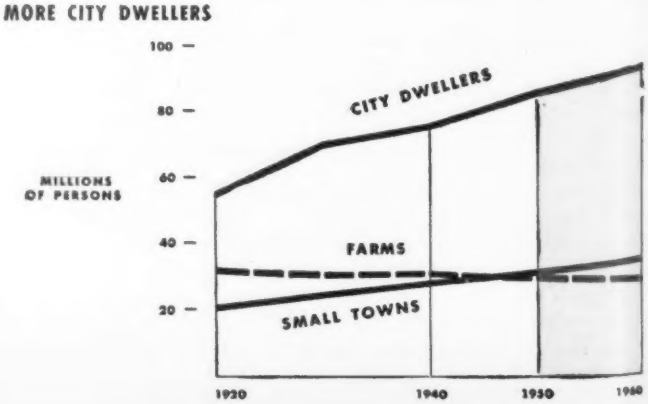
BUT THREE TIMES AS MANY FAMILIES



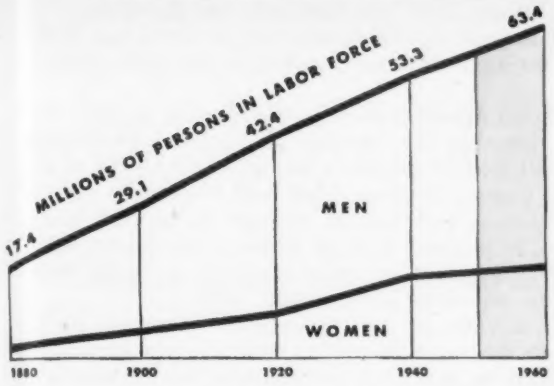
MORE OLDER PEOPLE



MORE CITY DWELLERS

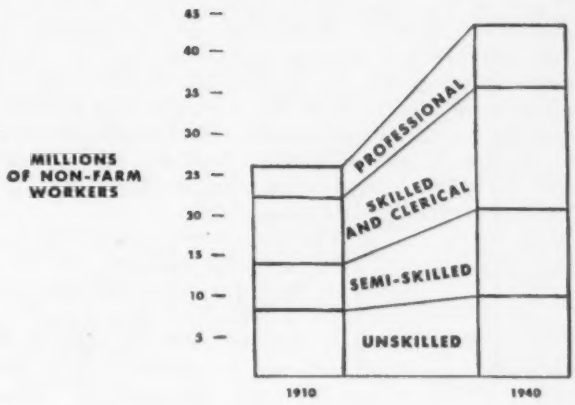


MORE AND MORE WOMEN ARE SEEKING JOBS

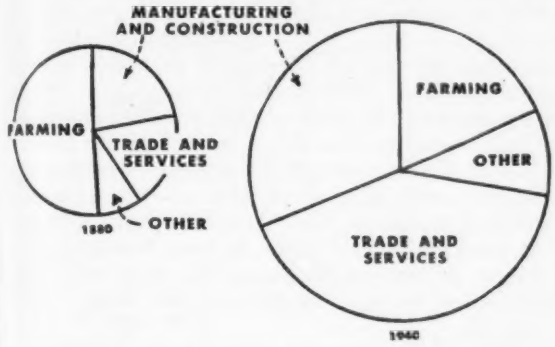


ANATOMY OF THE LABOR FORCE

THE LABOR FORCE IS GROWING MORE SKILLED



FARMING IS GIVING WAY TO OTHER OCCUPATIONS



3. The population will continue to become more urbanized. Small and medium-sized cities will grow faster than the largest cities. The general westward migration which was accelerated by the war will continue.

4. Our people will keep on getting more homogeneous. There has been almost no immigration since 1929, so the number of immigrants who have been in the country for less than 20 years will make up less than one percent of the population in 1950 as against 10% in 1930.

An even more important factor in making the population all of a kind has been the growth of universal education. The proportion of children 14-17 years old attending high school doubled between 1920 and 1936. The rise of the radio, movies, and national magazines has also levelled us out. These developments not only raise the general educational level of the nation but also tend to standardize the public's tastes and attitudes.

LABOR FORCE

The volume of goods and services produced by 145 million persons in 1950 and 155 million in 1960 will depend on what share of the population is in the labor market and the amount of work those employed actually do. The proportion of the population in the labor force has shown little change in the past few decades. So the 20th Century Fund assumes that the relationship between labor force and population will be about the same in 1950 and 1960 as it was just before the war. On this basis 60 million people will be in the labor market in 1950 and 63.4 million ten years later.

As you can see from the charts, however, there will be several important changes in the composition of the labor force. More women will be working. In 1870 only one out of every eight worked. By 1940 the proportion had grown to one out of four, and evidently will go on rising.

However, the increase in the number of women working will just about be offset by earlier retirements and longer schooling. This explains why there is little change in the ratio of labor force to population.

UNEMPLOYMENT

The effectiveness of the labor force depends not only on its size but on how fully it is employed. We have never had full employment in the sense that everyone able and willing to work had a job at the same time. Even in good years unemployment has seldom averaged less than 5% of the working force because workers are always moving from job to job. And in 1932, nearly one-fourth of all workers were unable to find jobs.

For this reason, the 20th Century Fund assumes that, even with good business in the 1950s, unemployment will average 5% of the labor force. This works out to 3 million unemployed in 1950.

In addition, the Fund expects the long down-trend in average weekly hours to continue. A century ago, workers put in a 12 hour day for 6 days a week. By 1940 the average work-week had declined to 44 hours in non-agricultural jobs and 52 hours in agriculture. If this trend continues, the average in non-farm jobs will be down to 38 hours a week in 1960, and farmers will work 48 hours.

Adding all this up, and allowing for vacations, absenteeism, and sickness, the 20th Century Fund estimates that the U. S. will put in 121 billion man-hours of work in 1950 and 118 billion in 1960. This compares with 105 billion in 1940 and with 154 billion at the peak of the war effort. The quantity of goods and services that can be turned out with this amount of labor effort will depend on average output per man-hour, or productivity.

PRODUCTIVITY

The key to our future economic welfare is productivity. It is the five-fold increase in output per man-hour that has made it possible for us to work shorter hours and still enjoy a rising standard of living. This increase in productivity has been accomplished not by working harder but by constantly inventing better machinery to supplement human energy with mechanical power.

Of course, in any specific factory at any given time, productivity depends largely on the willingness and ability of labor and management. But over the years, the actual effort of the individual worker becomes much less important than the effort of the machine. The most energetic and skilled blacksmith of a century ago could not remotely approach the productivity of today's semi-skilled worker operating automatic power-driven equipment.

EACH PRODUCING MORE . . .

In 1860, the average worker turned out 33¢ (in 1944 dollars) worth of goods in an hour. By 1940, this had grown to $1.22. This sensational increase in productivity was due to the increased use of power-driven machines. In 1860, the average worker had the help of only half a horsepower of animal or mineral energy. In 1940, he had the use of 2.7 horsepower. To put it another way, if there had been no increase in the use of mechanical power since 1850, it would have taken 290 million workers to turn out the amount of goods and services actually produced at the peak of the war effort by only 63 million workers.

DO MACHINES KILL JOBS

Past history also shows that we need not fear the long run effects of the introduction of labor-saving machines. On the contrary, the only way we can improve the material welfare of everyone is to continue and even step up the rate at which we save labor by using machines.

Some people, it is true, are thrown out of work and a few of them may not be able to find other jobs easily. But mechanization more than compensates for "technological unemployment" by making it possible to produce more and better things for everyone—things that themselves create jobs. Development of the railroads and the automobile, for example, put a lot of canal boat and livery stable operators out of business. But it cut the cost of transportation and created many times more jobs than it eliminated.

The 20th Century Fund also points out that the most important reason that the technological revolution developed luxuriantly in the U. S. between 1850 and 1940 was that competitive enterprise provided a generally favorable climate. It is true that natural resources were plentiful and that the population was growing rapidly both in numbers and in skill. But what we had to a unique degree here was an atmosphere which favored risk-taking, fostered the vast capital investment necessary to harness and apply mechanical energy, and provided the incentives necessary to put capital and inventiveness to work.

No other economy has equalled ours in the ability to produce more and more with continually diminishing human effort. The test it now faces is whether it can eliminate the ups and downs in production and employment that have gone along with it. But an abundance of evidence indicates that we ran into trouble after 1929 not because we developed too many labor-saving machines but because we didn't adjust our economic mechanism to keep the process going.

The key importance of mechanization is indicated by the fact that the increase in national production since 1860 closely parallels the increase in use of mechanical power. Between 1860 and 1940, both volume of production and use of energy multiplied about 11 times. It is clear that, in order to keep our standard of living rising, we must continue to apply more and more power to production.

Chief advantage of mechanical energy is, of course, its low cost. Electric energy is now delivered for as little as a cent a horsepower, while the same amount of human energy costs $10.

And there are other important advantages. Mechanical energy can be delivered in greater concentrations than any other form. It is also more convenient, compact, mobile, and controllable. Consolidated Edison in New York delivers enough electricity in a day to do the work of 3 million draft horses.

These advantages are now so universally accepted that it's hard to realize how recently we left the horse and buggy era. At the turn of the century, animals and men provided more than half the energy used in production and transportation. It wasn't until World War I that trucks replaced horses in local hauling and tractors began to invade the farms. Here is how the use of mechanical energy has grown since 1850:

	Total Energy Output (Billions of Horsepower-Hours)	Percent Supplied by:		
		Mechanical Energy	Humans	Animals
1850	17.6	6	15	79
1860	25.2	7	14	79
1870	27.8	12	15	73
1880	39.9	17	14	69
1890	61.1	28	12	60
1900	82.9	38	10	52
1910	131.4	57	8	35
1920	197.4	73	6	21
1930	238.3	84	5	11
1940	289.4	90	4	6
1950	410.4	94	3	3
1960	489.8	96	2	2

PRODUCTIVITY IN THE FUTURE

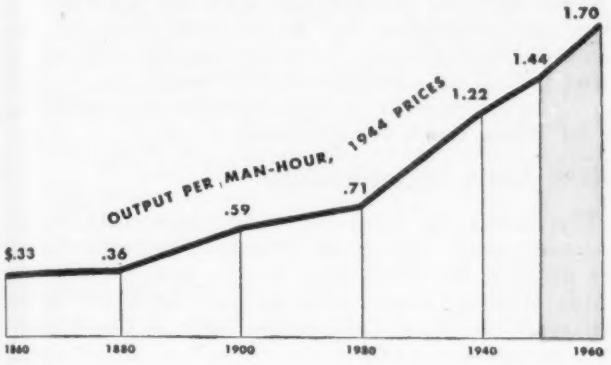
Any attempt to predict future developments in productivity is complicated by the fact that the changes do not occur at an even rate. Between 1850 and 1940 the average increase in output per man-hour was 18% per decade. But the changes varied all the way from 3% between 1870 and 1880 to 42% for the decade ending in 1940. There is, therefore, no simple way to extend past trends to obtain a foolproof figure for productivity at a future date.

For purposes of this study, however, the 20th Century Fund assumes that the average rate of increase since 1850 may be projected to estimate output per man-hour in 1950 and 1960. Thus, output per man-hour works out to $1.44 in 1950 and $1.70 in 1960 as against $1.22 in 1940 (all in 1944 dollars).

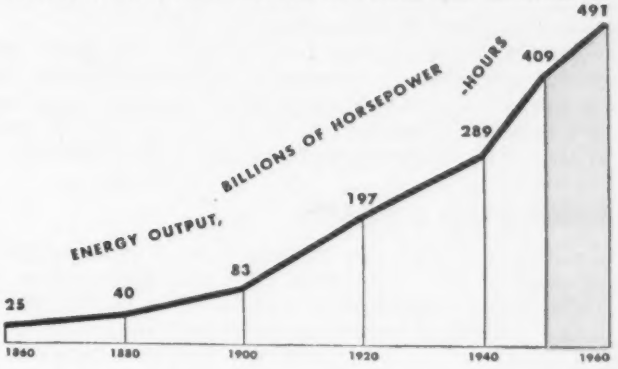
As the Fund points out, this is a critical assumption, and it is further complicated by the fact that there is a wider possibility of error in this estimate than in most of the others in the study. If, for example, it is assumed that productivity will increase at the pace set from 1920 to 1940 which averaged 36% per decade, then 1960 production would be about double the 1940 level instead of only 157% of it, as the 20th Century Fund estimates.

A CENTURY OF ECONOMIC PROGRESS 1860–1960

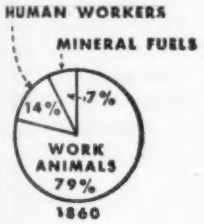
OUTPUT PER MAN-HOUR SHOULD BE 5 TIMES AS GREAT

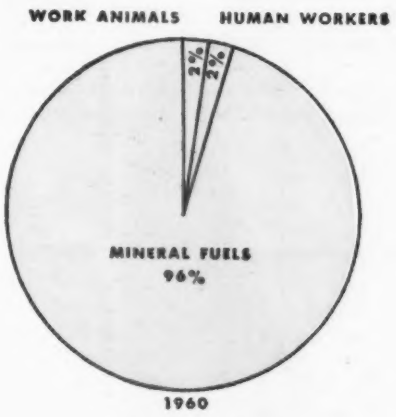


BECAUSE OF A STEADY GROWTH OF POWER AND MACHINES

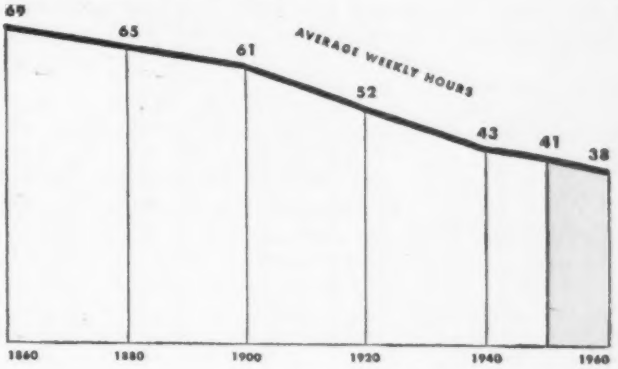


SO WITH LESS EFFORT

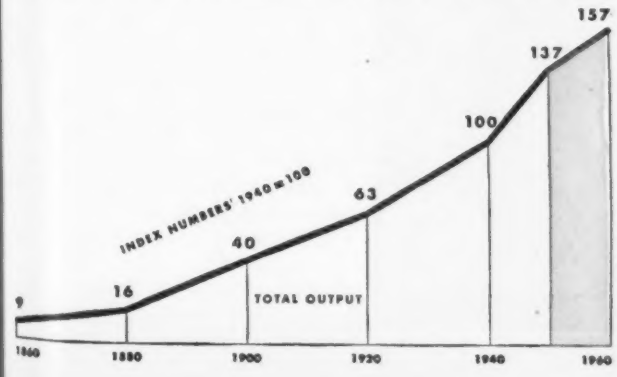




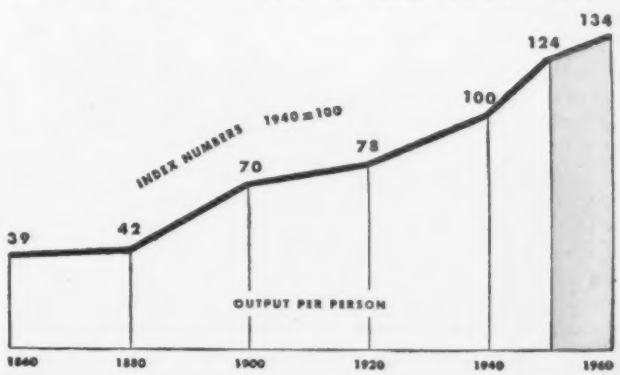
AND A SHORTER WORK WEEK



6 TIMES AS MANY WORKERS CAN PRODUCE 17 TIMES AS MUCH



AND PROVIDE 3½ TIMES AS MUCH OUTPUT FOR EACH PERSON



TOTAL NATIONAL OUTPUT

The potential volume of goods and services in 1950 and 1960 can be determined by simple arithmetic, using the assumptions outlined on the preceding pages. Of an estimated population of 145 million in 1950, about 60 million persons will be in the labor market and 57 million of them will have jobs if we succeed in keeping business activity at a high level.

This many people would work 121 billion man-hours. With output per man-hour estimated at $1.44 (in 1944 dollars) the total value of goods and services produced, or the gross national product, would come to $177 billion. Similar calculations yield a gross national product of $202 billion for 1960.

As the 20th Century Fund emphasizes, these estimates are neither a forecast of actual production nor an appraisal of maximum potential production. They are merely an attempt to show in dollars and cents what can be achieved with high-level employment.

HIGHER LIVING STANDARDS

Compared with any prewar year, a gross national product of $177 billion in 1950 and $202 billion in 1960 would represent a handsome gain. It would make possible a substantial rise in living standards. In 1950 we would produce a fifth more than in 1941.

CAN TURN OUT ENOUGH GOODS AND SERVICES . . .

However, the volume of goods and services turned out in 1950 would be only slightly higher than present production. This is because the number of persons at work today is 2 million above the estimated normal for 1950, and average weekly hours are higher than they will be then. Almost a million and a half of the emergency workers drawn into the labor force during the war are still at work and unemployment is lower than the figure assumed for 1950.

The estimates of 1950 and 1960 gross national product, as well as the figures for past years used in the chart, are expressed in 1944 prices. This is not a prediction that the price level will settle down to the 1944 level which would involve a drop of 18% in the cost of living and 26% in wholesale prices. It is merely a device to eliminate price fluctuations so that the figures will show only the actual changes in the physical volume of production.

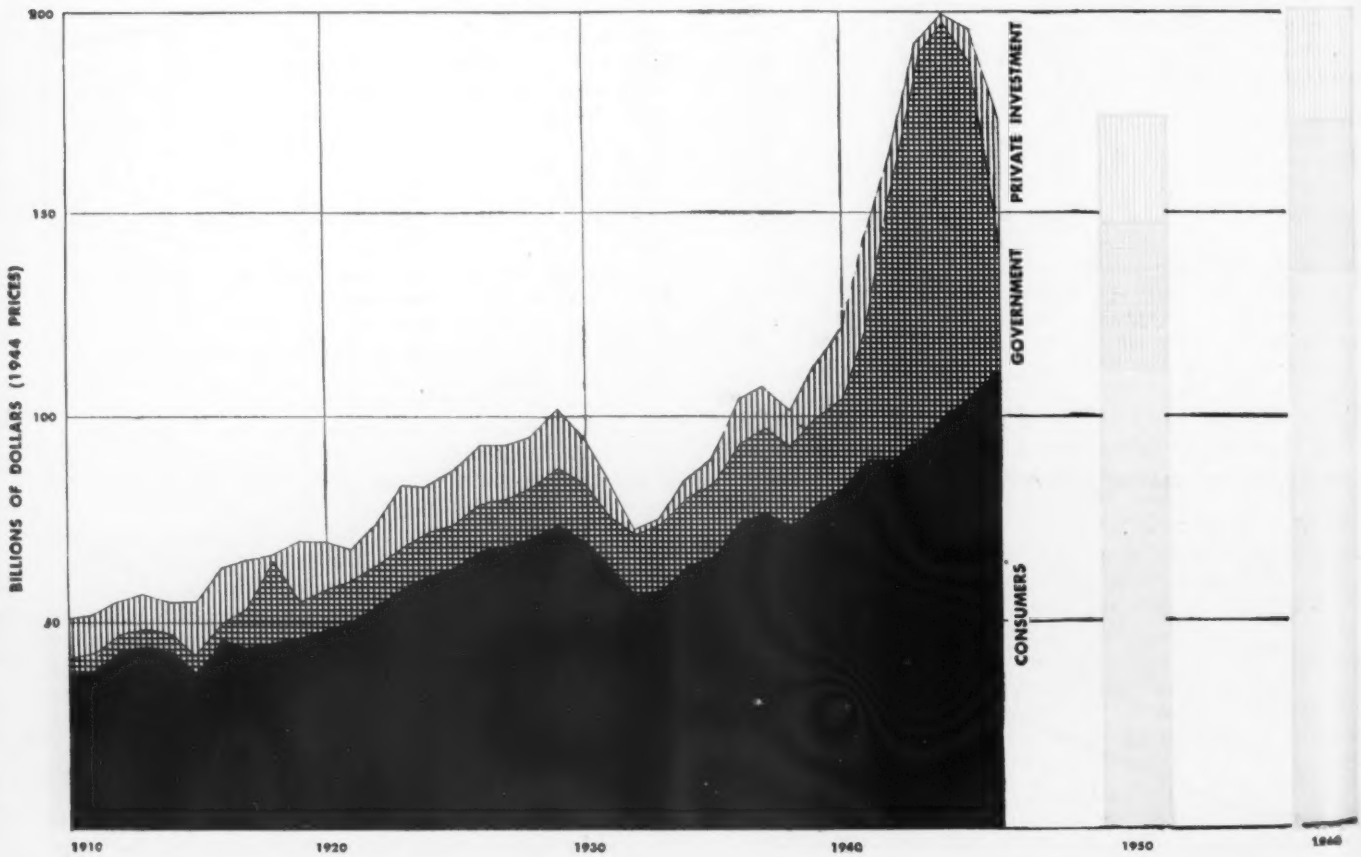
Gross national product measures the total market value of everything the nation produces. All the goods and services produced are absorbed in one of three ways: by consumer expenditures; by expenditures for investment in capital goods or inventories; or by government expenditures.

HIGHER TAXES, LESS INVESTMENT

The division of total output among consumers, investment, and government will be somewhat different in 1950 and 1960 than in the past. About two-thirds of total output will go into consumer goods and services. This is about the same as the proportion in prewar years.

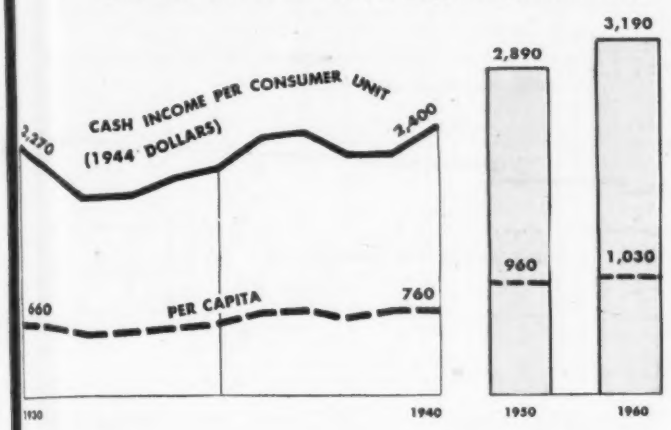
Government's share will continue to grow, however. It rose from 11% of total output in 1929 to 17% in 1940. At the peak of the war effort, half of all production went to Uncle Sam. Government expenditures have dropped to less than half the war peak and they will continue to decline slowly. But government's share will still run to around 20% in the 1950's. On the other hand, the ratio of investment to total output shows a slight long term decline.

HOW TOTAL OUTPUT IS DISTRIBUTED

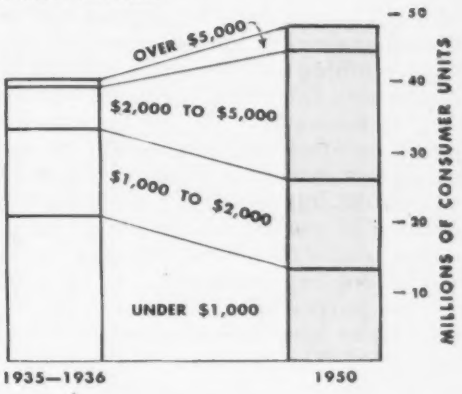


MORE CONSUMER PURCHASING POWER

CONSUMERS WILL BE ABLE TO BUY 50% MORE THAN IN 1930'S



EVERY OTHER FAMILY...INSTEAD OF EVERY SIXTH FAMILY... WILL HAVE $2,000 OR MORE TO SPEND.



CONSUMER INCOME

U. S. business can look forward to a 1950 consumer market twice as large as in the worst year of the depression, half again as large as in 1929, and one-fifth larger than in 1941. That is the major conclusion of the 20th Century Fund's analysis of consumer purchasing power. Here are the steps by which it arrives at that conclusion:

1. With gross national product at $177 billion in 1950, past experience indicates that income payments to individuals would run to $138 billion.

2. Income tax rates are assumed to equal the 1942 schedules, so individuals would pay $11 billion in taxes (as against $19 billion in 1946).

3. Savings are estimated at $12 billion, or about 9% of income after taxes.

4. Subtracting taxes and savings, consumer purchases of goods and services would total $116 billion.

LOWER SAVINGS

Many experts would criticize the assumption that savings will amount to only 9% of income. Some of them look for a ratio as high as 20% in prosperous postwar years. The 20th Century Fund justifies the use of a low figure on three grounds: (1) people built up reserve of savings during the war; (2) expanding social security will reduce the need to save for old age; and (3) taxes will cut into savings. The Fund's estimate of savings plus taxes in 1950 adds up to a higher percentage of income than in prosperous prewar years.

The standard of living won't rise as rapidly as the total income going to consumers, because the increased income will be split up among more family units. But the average consumer unit (a family or a single person living alone) will be a third better off in 1960 than in the 1930's.

Shifts in the distribution of income will be even more important, from a marketing standpoint, than the general increase in over-all consumer income. More consumer units will be in the over-$2000 brackets than ever before and this group will be receiving a much larger share of total consumer income.

Part of the apparent increase in income is cancelled out by higher prices. To show the actual increase in purchasing power, the figures should be adjusted for an estimated one-third increase in the 1950 price level over that of the mid-1930's. This would mean that a $2,650 income in 1950 would buy no more than a $2,000 income in 1935-36. Even if this adjustment is made, the resulting figures still show a striking upward shift.

Income Class	Consumer Units in Millions		Cash Income in Billions	
	1935-56	1950	1935-36	1950
Total	39.2	47.9	$85.0	$135.0
Under $1000	20.8	13.0	17.0	7.7
$1000-2000	12.2	12.9	28.1	21.5
$2000-5000	5.5	18.2	23.8	62.1
Over $5000	0.7	3.8	16.1	43.7

FOR CONSUMERS...

In addition to dollar income, shown in the above table, consumers also receive "income in kind"—food and fuel produced by farmers for their own use, board and lodging received by domestic servants. Such income will have a value estimated at $3.3 billion in 1950, most of which will supplement the $7.7 billion received by those in the "under $1000" bracket.

The urban market will continue to be far more important than the rural market. Consumer units in cities will receive cash incomes of $3,445 on the average in 1950, more than twice the farm average of $1,635 and almost twice the small town average of $1,880.

THE FARM MARKET

These figures don't provide an accurate measure of the relative importance of the rural and urban markets because rural consumers pay a lot less for food, fuel, shelter and so have more to spend for other things. If there were any way to adjust for these things, the figures would show a smaller spread between the two markets, but the urban market will still be dominant.

All these figures underline a general upgrading in consumer demands which would accompany high-level production and employment. It will have a profound effect on marketing practices. The average person will eat better, dress better, and live in a better house with better equipment. And he will have more money to spend for travel, recreation, and luxuries.

CONSUMER MARKETS

The improvement in living standards during the 1950 decade will lead to important changes in the way consumers spend their dollars. Even though they will eat better, dress better, and live in better houses, a smaller share of the consumer dollar will be spent on food, clothing and shelter. A growing share will go for appliances, furniture, travel, and recreation.

This means that the fastest growing markets will be those providing what might be called "optional" goods and services — things which add to comfort and enjoyment but which are not strictly necessary. Markets for necessities, on the other hand, will expand at a slower rate than total consumer expenditures.

The growing importance of "optional" goods and services is one of the reasons why it's increasingly difficult to keep our economic machine going on an even keel. The purchase of "optional" goods can be postponed with little hardship. So anything that causes people to put off buying a new car, a new house, or a new radio has a far greater effect on production and employment now than it did when the major share of the consumer dollar went for necessities.

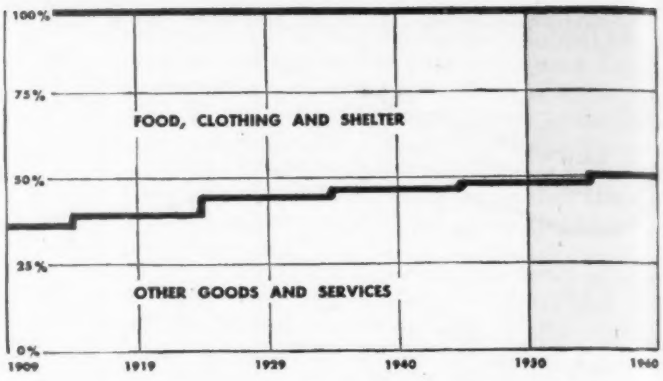
Some of the trends in major markets are summarized in the following sections.

FOOD

Although food is by far the largest item in the consumer budget, its relative importance is declining slowly as living standards rise. People eat the same number of pounds of food they ate in 1909 but the food is better from a nutritional standpoint and easier to prepare. Thus, the trend favors fruits, vegetables, and dairy products as against meat, potatoes, and bread.

More and more food is being processed in factories rather than in consumer kitchens. Improved methods of manufacture and distribution have transformed the luxury foods of yesterday into the standard foods of today. New kinds of processed foods — canned, frozen, and dehydrated — are appearing constantly.

STANDARD OF LIVING YARDSTICK: MORE OF THE CONSUMER DOLLAR GOES FOR THE COMFORTS OF MODERN LIFE



CLOTHING

Three long term trends will shape the clothing market in the future: (1) the shift from home and custom to factory fabrication is almost complete;

WHERE CONSUMER DOLLARS GO

(Figures in Billions of Dollars)

	1909	1919	1929	1940	1941	(1944 Prices) 1950	1960
Total Consumer Expenditures	28.8	60.8	80.3	70.6	80.4	116.2	134.2
Food, Liquor, and Tobacco	9.9	22.3	23.7	21.9	25.3	36.2	41.1
Food	7.4	18.8	19.9	16.4	19.0	27.2	30.8
Liquor and Tobacco	2.5	3.5	3.7	5.5	6.3	9.0	10.3
Clothing and Personal Care	4.4	9.8	12.1	9.8	11.5	16.2	18.7
Housing	6.8	10.1	14.4	12.6	13.3	19.3	21.4
Rent a.	5.5	7.9	11.3	9.1	9.7	14.0	15.4
Fuel	1.0	1.5	1.7	1.7	1.8	2.5	2.8
Electricity	0.1	0.3	0.6	0.9	1.0	1.6	1.8
Household Equipment and Operation	2.8	6.2	10.6	8.7	10.3	15.0	17.4
Appliances	0.2	0.4	0.8	1.0	1.3	1.8	2.4
Consumer Transportation	1.6	5.2	8.6	7.3	8.6	12.7	16.4
Autos and Private Planes b.	0.6	3.5	6.0	5.7	6.8	9.6	12.7
Local Bus and Street Car	—	—	0.8	0.7	0.8	1.5	1.5
Intercity Bus	—	—	0.1	0.1	0.2	0.2	0.2
Airlines	—	—	c.	c.	c.	0.1	0.5
Railroads	0.4	0.8	0.6	0.3	0.3	0.4	0.3
Medical Care, Insurance, and Death Expenses	1.1	2.8	4.5	4.7	5.2	7.7	8.7
Recreation	0.9	2.1	3.8	3.3	3.7	5.7	6.9
Radio and Television Sets	0.2	0.7	1.0	0.6	0.8	1.1	1.3
Private Education, Religion, and Welfare	1.2	2.2	2.7	2.3	2.4	3.4	3.7

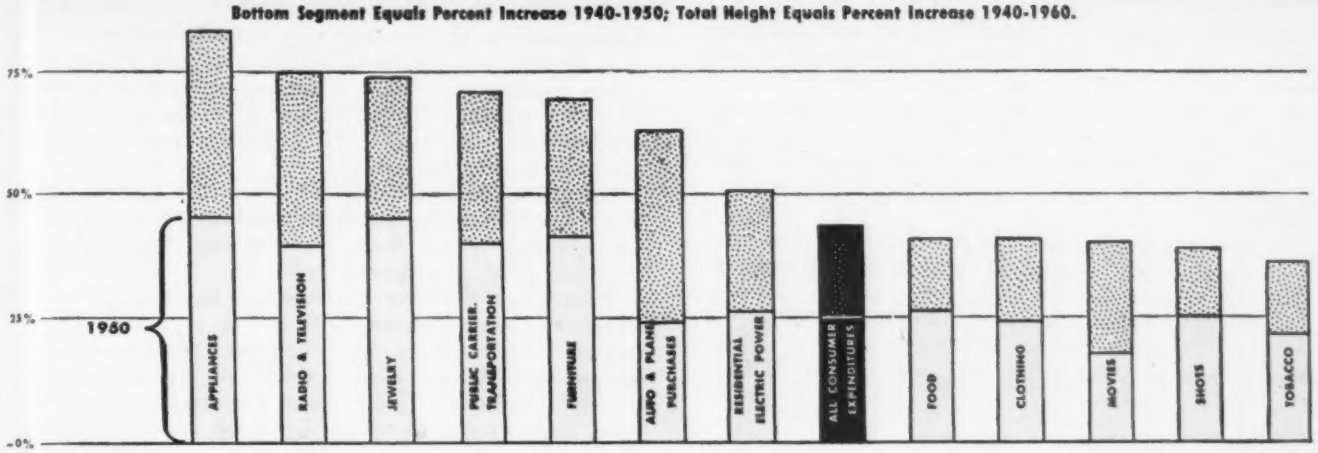
a. Includes Estimated Rent for Owner-Occupied Homes.

b. Includes Original Cost and Operating Expenses.

c. Less than $50 Million.

CONSUMER MARKETS IN 1950 AND 1960: Percent Increase in Sales Over 1940

Bottom Segment Equals Percent Increase 1940-1950; Total Height Equals Percent Increase 1940-1960.



(2) synthetics, chiefly rayon and nylon so far, are replacing cotton, wool, and silk at an accelerating pace; (3) there's greater standardization of styles and a trend to lighter and simpler clothing.

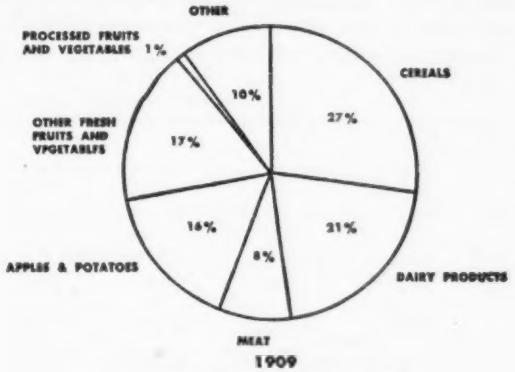
In 1909 consumers spent 14% of their income for clothing but by 1940 the ratio had reclined to 12%. However, this long run decline may be halted or reversed. The migration from farms to cities, the upgrading of incomes, and the growing demand for sports clothing will increase clothing expenditures.

HOUSING

The decline in the relative importance of housing expenditures — from 24% of consumer dollars in 1909 to less than 18% in 1940 — is expected to continue. The reason is that people feel they get more value for their dollars in other things than housing. Nevertheless, the housing market should be much larger in the 1950's than in the 1930's because much of our housing needs to be repaired or replaced.

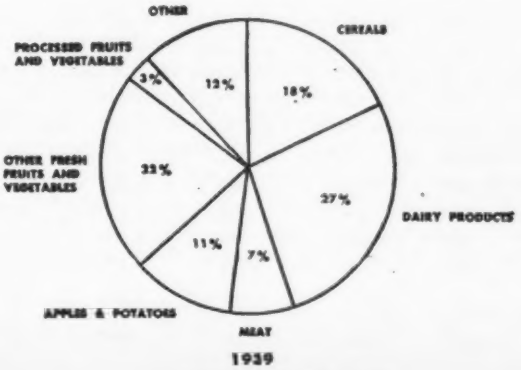
A Census survey in 1940 showed that 16 million of the nation's 37 million dwelling units needed to be replaced or needed major repairs. The 20th Century Fund estimates that the provision of adequate housing for everyone by 1960 would involve building 20 million new units and rehabilitating 5.4 million at a total cost of $115 billion (1944 prices). The Fund also estimates that we will fall 15% short of this goal even with continued high-level employment.

OUR CHANGING DIET: MORE MILK, FRUITS AND VEGETABLES LESS MEAT, POTATOES AND BREAD



1909

1880 POUNDS OF FOOD PER PERSON



1939

1882 POUNDS OF FOOD PER PERSON

HOUSEHOLD EQUIPMENT

More and more of the consumer dollar has gone for household equipment in the past four decades, largely because of the development of labor-saving appliances. The outlook is for a continuation of this trend. New appliances are being developed; and the large number of new houses slated to be built in the next few years, the wartime and postwar boom in the number of families, and the migration to the cities should add to appliance demand. The same factors should brighten the outlook for furniture, rugs, and other household items.

Some appliance markets may be saturated by the 1950's, however. A few years of high production would fill our homes with refrigerators, for example. However, replacement demand would run to 2.7 million units in 1960 and there would be a demand for 1.3 million refrigerators to equip new houses, so the market would still be bigger than in 1941 when 3.6 million were sold. However, new products must be developed if the industry is to keep up the pace it has set in the past.

TRAVEL

In 1916 the average person traveled 400 miles. By 1940 the average had grown to 2,400 miles, chiefly because of the rise of the automobile. The 20th Century Fund expects this growth to continue because as their incomes rise people spend more money traveling.

A good share of the increased spending will go to purchases of cars and planes. The Fund estimates that there will be 36 million cars on the road and 100,000 private planes in the air in 1950. The auto industry would be able to sell 5 million new cars a year after 1950 — 4 million for replacement and a million for population growth.

CAPITAL INVESTMENT

Investment plays a crucial role in our economy for two reasons. It is by plowing back part of our annual output that we are able to provide better machines and equipment to keep productivity rising. But the amount ploughed back varies widely from year to year. This unevenness of capital investment contributes to the instability of production and employment.

Because capital investment involves the purchase of durable goods, it can be postponed almost indefinitely when the outlook for profits darkens. Thus, capital investment plummeted from $18 billion in 1929 to $5 billion in 1933, a drop of 72%, whereas consumer spending fell only about half as fast in the same period.

MORE FOR EQUIPMENT

There has been an important shift in the relationship between construction and equipment, the two major types of investment. Before World War I, construction made up around three-fourths of total investment but the ratio declined to less than half in 1935-39. Part of the decline is, of course, explained by the fact that the depression left us with ample plant capacity but provided an incentive to buy more efficient machines to cut costs. Nevertheless, there is a well-defined trend towards allocating an increasing proportion of investment to equipment rather than to plant construction.

CAPITAL INVESTMENT . . .

A little less than two-thirds of total investment goes into industrial plants and equipment. Housing and other consumer construction (hospitals, schools, churches) averaged 27% of total investment during the interwar period. Housing fell from a peak of $6 billion in 1926 to $4.7 billion in 1929 and $600 million in 1933; and it had recovered only half the 1926 volume by 1940.

While other types of investment follow the ups and downs in general business, investment in housing construction follows a cycle of its own. This housing cycle is determined by factors such as the vacancy rate, the level of rents, and that of construction costs, which may not follow the trend of general business. When a drop in general business activity takes place during a declining phase of the housing cycle, as it did in 1929, the result is a deep and prolonged depression.

Government investment, of which the largest component is highways, has been much more stable than other types but it doesn't swing enough weight to stabilize total investment.

Because of the wide fluctuations in capital investment, it's much more difficult to estimate future capital expenditures than future consumer purchases. In order to make a relatively stable forecast, the 20th Century Fund bases its estimates on the long term trend since 1879, which shows a slight decline in the share of total output going to capital investment. Thus, investment under conditions of stable prosperity in the 1950 decade is estimated at 16% of total output as compared with a ratio of more than 18% in the late 1920's. On this basis, estimated capital expenditures work out to $28 billion for 1950 and $33 billion in 1960. Our ability to maintain high employment and rising living standards will depend in large measure on our ability to invest that much profitably in new machinery and buildings.

CAPITAL NEEDS

Analysis of our capital needs lends little support to the idea prevalent during the 1930's that we had reached economic maturity so that there was no way to invest as much as we had in earlier decades. No one has ever made an estimate of how much it would cost to modernize our industrial plant, which is valued at around $200 billion at prewar prices. If as much as a third of it needs to be replaced or rehabilitated, around $100 billion (current prices) of additional investment will be required.

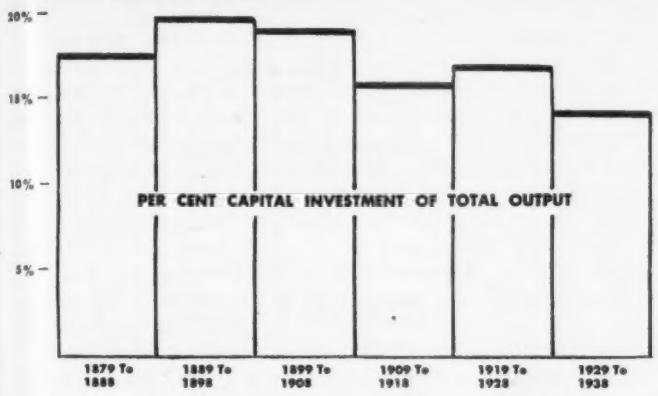
In addition, huge amounts of money need to be invested in housing and public works to raise the serv-

WHERE INVESTMENT DOLLARS GO

(Figures in Billions of Dollars)

	(Annual Averages)					(1944 Prices)	
	1920-1924	1925-1929	1930-1934	1935-1939	1940-1944	1950	1960
Total Capital Investment	$12,428	$17,186	$8,215	$10,445	$12.340	$27,700	$33,000
All Industries	7,570	10,112	5,272	6,889	8,089	17,800	21,125
Manufacturing	1,996	2,362	1,074	1,610	3,731	4,200	5,025
Food	261	357	194	244		228	273
Textiles	227	212	92	117		175	210
Steel	138	188	110	192		853	1,021
Autos	105	150	78	146		369	441
Chemicals & Petroleum	70	95	68	142		928	1,111
Machinery	—	—	—	28		180	216
Other	510	625	213	409		1,462	1,750
Transportation	1,797	2,303	1,277	1,822	805	4,300	5,100
Commercial	1,196	1,940	777	719	833	1,950	2,300
Utility	693	999	483	422	780	1,500	1,625
Other	1,888	2,508	1,661	2,316	1,940	3,950	4,700
Consumer Construction	3,806	5,557	1,547	2,256	2,912	7,200	8,255
Government Construction	1,052	1,517	1,396	1,299	1,338	2,700	3,620

OVER THE YEARS ABOUT 1/5 OF TOTAL OUTPUT IS PLOWED BACK AS INVESTMENT



BUT THE AMOUNT PLOUGHED BACK VARIES GREATLY FROM GOOD YEARS TO BAD, ACCENTUATING THE SWINGS OF THE BUSINESS CYCLE

ices provided merely to adequate levels. The 20th Century Fund estimates that the cost of a 15 year program to modernize our city streets and rural highways would run to $40 billion. To bring the nation's housing up to minimum standards of health and decency by 1960 would cost $115 billion. To conserve our natural resources and develop our water power would cost $27 billion over a 15 year period.

There seems to be little question that needs exist for all the capital investment we can make for a long time to come. The behavior of investment in the past strongly suggests that the problem is not one of lack of needs but one of finding ways to add to our capital in an orderly fashion. Capital investment has followed the boom and bust route in the past; what is wanted is a high but steady rate of investment.

WARTIME INVESTMENT DEFICIT

Demand for capital goods is stronger right now than ever before, largely because of the backed-up needs arising out of the war. Here is how wartime expenditures for capital goods which can be used in peacetime production compared with expenditures in the last 5 years of both the 1920's and 1930's: (Figures in billions of dollars)

	1925-1929	1935-1939*	1940-1944
Total Capital investment	$86	$65	$49
Industrial	51	43	32
Manufacturing	12	10	14
Metals, chemicals, machinery, petroleum	6	6	11
All Other	6	4	3
Commercial	10	5	3
Railroads	5	3	3
Electric power	5	3	3
Consumer Construction	28	14	12
Public Works	7	8	5

*Adjusted to Wartime Prices

Wartime restrictions held investment in all civilian lines far below what would be spent in prosperous peacetime years. Thus, there was a backlog of investment needs at the end of the war which ran to more than $30 billion, if the 1925-1929 demand can be taken as typical. Whatever the precise size of the backlog, it is clearly great enough, when added to the normal yearly demand for new investment, to keep the heavy goods boom going for some time to come. The test of our ability to stabilize capital investment will come later.

There is also a huge foreign demand for American capital. How far we will go toward meeting this depends largely on whether international political and economic conditions are stable enough to make private foreign investment a good risk.

If we invest abroad in the same proportion we did in the late-1920's, our foreign investments will total $1.6 billion during the year 1950 and $1.5 billion in the year 1960. This will mean a net increase in our foreign holdings of $15 billion during the 1950's, raising the total of such holdings to about $25 billion, as against a total of $10.6 billion in 1940.

To make that much foreign investment pay out, an expanding volume of world trade would be required. Foreign nations would have to get enough dollars not only to pay for goods they bought from us but also to pay interest and dividends on U. S. investments. If our overseas investments increase to $25 billion by 1960, annual interest and dividends owed us will run to almost $1¾ billion.

To pay us that much, foreign nations would have to sell much more in the U. S. than ever before. The 20th Century Fund calculates that imports of $7.3 billion in 1950 and $8.1 billion in 1960 would provide other countries with the dollars they need. Imports ran to $2.5 billion in 1940 so we would have to buy 3 times as much abroad to keep expanding our foreign investments.

With good business, U. S. demand for imported goods should be well above prewar. Rising living standards will widen the market for such consumer items as British tweeds and French perfumes. Moreover, we will need to import more raw materials than ever before because we used up our natural resources at a prodigious pace during the war.

NEW INDUSTRIES

The new methods, materials, and products developed during the war may well have a more profound and lasting effect on future capital requirements than the backed-up demands accumulated in wartime. Here are some of the wartime developments which may have important peacetime applications: new chemical processes and products including synthetic rubber, plastics, synthetic fibers and fabrics; new food products and new methods of food processing; new uses for glass, plywood, and the light metals; tremendous advances in aviation; and new applications of atomic energy and fissionable products in power production and medicine.

Large capital expenditures will be required to push these developments further and adapt them to civilian use. New businesses and perhaps entire new industries will grow up, adding to the demand for capital goods for many years.

THE COST OF GOVERNMENT

To the traditional certainty of death and taxes can be added the certainty that the cost of government will take a much larger share of national income than ever before in peacetime. After the Civil War and again after World War I, federal expenditures moved up to a level four times prewar. And it is already clear that World War II is going to have about the same effect.

In 1940, federal, state, and local governments spent $19 billion, of which a total of $2.2 billion went for national defense, veterans, and interest on the war debt. By 1950, the 20th Century Fund estimates that all governmental units in the U. S. will be spending more than $45 billion. Federal expenditures are estimated at $27.6 billion in that year as against $9 billion in 1940.

Part of the increase is explained by higher postwar prices. Adjusting for price changes would reduce the 1950 figure from $45 billion to $33.5 billion. This is still 80% above the 1940 level. Increased expenditures for public works, social insurance, and schools explain another small part of the rise.

But costs arising out of the war are by far the most important factor. Military and veterans' expenditures and interest on the war-swollen national debt will add up to over $17 billion in 1950. This is only 10% less than total government expenditures in 1940.

The only major category of government expense which would be lower in 1950 is welfare. With high-level employment and more social insurance, relief and other welfare costs should run to $2.5 billion in 1950 as against $3 billion in 1941.

The following paragraphs describe important trends in the major items of government expense.

MILITARY

The 20th Century Fund assumes that we will maintain an armed strength of 2 million men (including trainees) and that it will cost $3,300 to equip and maintain each man, so total military expenditures will run to $6.6 billion. But even if we decide to maintain a smaller armed strength, the total cost might easily be at least $6.6 billion because the present per serviceman cost of over $6,000 a year may not decline.

AND GOVERNMENT . . .

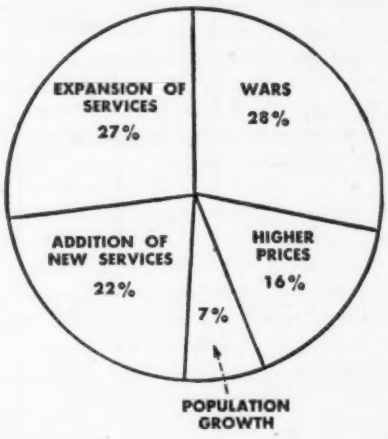
VETERANS

It will cost at least $2.9 billion to take care of veterans in 1950 even if benefits are not increased. That's 5 times the 1941 cost. Pensions for World War I veterans rose steadily from $116 million in 1924 to over $300 million in 1945. That rise will continue for another 20 years. By far the largest expense will be for World War II pensions which are already costing $900 million. Disability and death benefits will cost about $1¾ billion in 1950; hospitalization will add another $250 million; and insurance $150 million.

SOCIAL SECURITY

Future expenditures for social security will depend on whether steps are taken to extend coverage and liberalize benefits. Over 60 million people are now covered so the cost is certain to increase rapidly as more of them begin to draw payments. With high-level employment in 1950, estimated old age and unemployment benefits under the present system would run to over $5 billion. Expansion of benefits, as recommended by the Social Security Board, would raise the cost to over $9 billion.

WHY THE COST OF GOVERNMENT HAS INCREASED. The $25.6 billion increase in cost from 1913 to 1941 was due to:



PUBLIC WORKS

Even an economy-minded Congress is almost certain to go along with expenditures for highways, airports, waterways, flood control and conservation. Thus, an increase in expenditures for transportation and natural resources from less than $2.5 billion to over $5 billion in 1950 seems probable.

SCHOOLS

Education ranks third among all government expenditures. In 1941 we spent almost $2.5 billion—10% of all government dollars—on schools. Teachers' salaries account for almost three-quarters of the total cost so the trend towards higher salaries will boost the nation's bill for education.

WHERE TAX DOLLARS GO

(Figures in Billions of Dollars)

	1913	1932	1941	(1944 Prices) 1950	1960
All Government Expenditures	2.5	12.4	23.1	45.5	50.7
Federal	0.7	4.3	12.9	27.6	28.6
State	0.2	1.8	3.6	7.0	9.3
Local	1.6	6.3	6.6	10.9	12.8
Military	0.27	0.7	6.1	5.6	6.6
Veterans	0.18	0.8	0.6	2.9	3.2
Interest	0.15	1.3	1.7	7.9	8.1
Social Insurance	—	0.2	1.9	7.7	8.7
Welfare & Health	0.31	1.5	4.1	4.0	4.1
Education	0.65	2.5	2.7	3.7	4.3
Public Works	a.	a.	a.	5.6	7.1
Transportation	0.40	1.9	2.0	1.8	2.7
Natural Resources	0.03	0.6	1.4	1.2	1.1
Police & Fire	0.19	0.7	0.7	1.0	1.1
Other	0.40	2.4	2.0	3.0	3.6

a. Included in other groups.

NATURAL RESOURCES

The war left the U. S. with a depleted supply of most natural resources, and with critical shortages of some of the most essential minerals. Nevertheless, lack of natural resources should not be a limiting factor on our productive capacity. With relatively free access to world markets, we should be able to get all the raw materials we need. And, even if we were denied access to world markets, we could use our low-grade reserves and develop substitutes without causing a prohibitive reduction in our living standards, though everyone would feel the effects in one way or another.

The U. S. economy consumes about a billion and a half tons of raw materials each year, or about 11.5 tons per person. Of this 3.5 tons are coal, 1.5 tons are petroleum, and iron and copper ore each contribute about a half a ton. In 1939 the value of unrefined minerals output was $4.2 billion and 2% of all workers were engaged in mining or lumbering.

FUTURE REQUIREMENTS

The level of industrial production projected by the 20th Century Fund would raise minerals requirements a third above 1940 by the year 1950 and 50% above 1940 a decade later. Here is how natural resources requirements in the 1950 decade would compare with 1940 and the wartime peak: (Index numbers, 1940 equals 100)

	Wartime Peak	*1950*	*1960*
All minerals	138	133	151
Metals	157	117	126
Fuels	130	141	164
Other	141	128	142
Lumber	126	93	76
Electric Power	159	173	224
Manufactured Gas	120	94	75

The capacity of our supplies of natural resources to support future levels of output cannot be determined with any great accuracy. It will depend on the size of our reserves and on our ability to use supplies more economically and develop substitutes.

WITH THE RESOURCES AVAILABLE . . .

Because there is no way to measure these factors with any degree of precision, all estimates of the number of year's supply are subject to wide errors. However, such estimates are useful in directing attention at those resources where every effort should be exerted to develop new supplies, substitutes, and more economical methods of use.

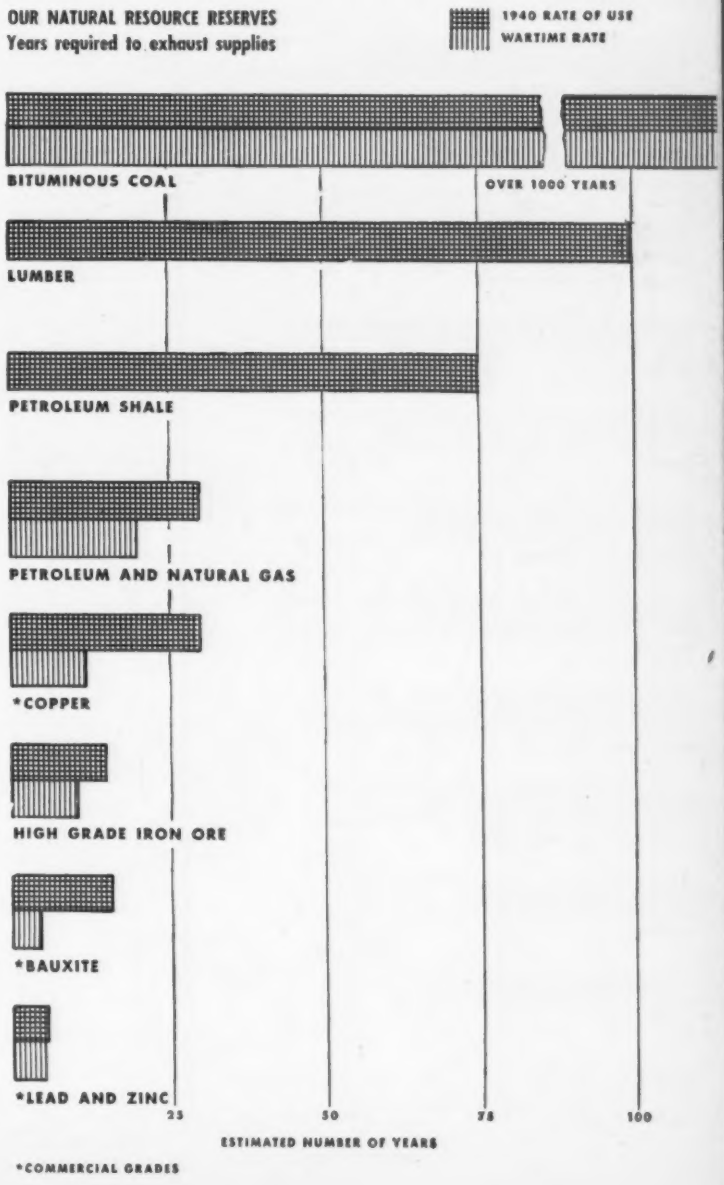
BIGGEST PROBLEMS: LEAD AND ZINC

Commercial grades of zinc, lead, and bauxite will be exhausted before 1960 even if the rate of use is cut to half the wartime rate. Supplies of petroleum and natural gas — which furnish 40% of our energy — will last longer than 20 years but their partial depletion will raise many technical and economic problems long before that time. Possible exhaustion of high-grade deposits of such minerals as iron and copper in the foreseeable future will stimulate development of processes to use low-grade deposits.

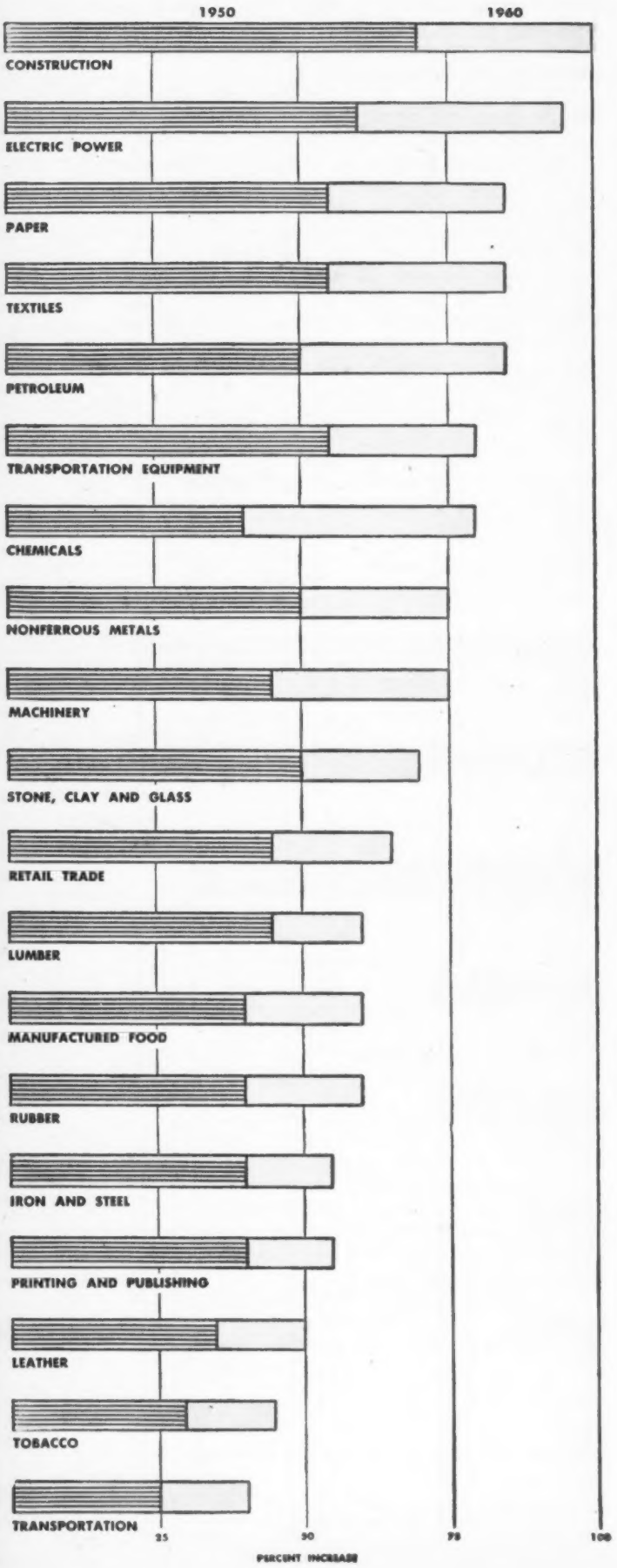
We have been discovering more and more ways to stretch our supplies of natural resources, however. In the case of tin, the electroplating process saves 50% of the tin used in tinplate production. The electric power industry uses less than 40% as much coal per kwh now as in 1920. The development of new materials and new ways of using old materials also expands our resource capacity.

Our bituminous coal reserves are adequate for over a thousand years even at the wartime rate of use, though production costs might rise substantially as inferior coal beds were used. After that, there are huge deposits of sub-bituminous coal and lignite which could carry us along for another thousand years. In comparison, maximum petroleum reserves are minute, adequate only for about 30 years consumption at the current rate. That is why the experts are trying to find ways to produce oil from coal cheaply enough to be commercially feasible.

Even though we have been using up lumber faster than it grows, there is little doubt that enough will be available in the future to meet at least minimum needs. Annual timber growth runs to about 32 billion board feet. But we cut over 40 billion board feet a year before the war and lost another 6 billion through fire, insects, and disease. An adequate conservation program could increase annual growth enough to offset this depletion.



PRODUCTION PROSPECTS: Estimated Percentage Increase in Industrial Activity Over 1940



INDUSTRIAL CAPACITY

At the end of World War II U. S. industry found itself with surplus capacity in some lines and serious deficiencies in others. There was more than enough aircraft, machine tool, and synthetic rubber capacity but not nearly enough sheet steel, copper, or electrical machinery capacity to meet pent-up demands.

War experience showed, however, that industrial capacity can be expanded enormously in a few years, given the need and the funds. Thus lack of industrial capacity should not prove a bottleneck to meeting the demands of consumers in the 1950 decade.

A rough estimate places our total investment in industrial facilities (manufacturing, mining, transportation, and distribution) at $200 billion. Just how much capacity industry as a whole, or any given industry, has is impossible to measure.

Capacity is a most elusive concept. In a technical sense, the capacity of an industry is the combined production of all its plants working 24 hours a day, 365 days a year, less an allowance for repairs, breakdowns, and other technical factors. Actual capacity is far less, however. Some facilities are obsolete or high-cost. Supplies of raw materials and components may be insufficient to keep assembly plants running full-steam. Moreover, demand for many products isn't great enough to support round-the-clock production.

PLENTY OF CAPACITY

During the past quarter century, however, experience shows that we have had more than enough overall capacity, and more than enough capacity in almost every industry, to meet all demands. An extensive study showed that even in 1929 only the steel and machine tool industries were definitely operating at capacity.

The growth of productivity as old machines are replaced with new and more efficient ones and as new techniques are developed is one of the main reasons why industrial capacity more than keeps pace with markets. The depression of the 1930's led to a net retirement of about 5% of total manufacturing facilities but manufacturing plants in 1939 could have turned out a quarter more than in 1929 because productivity was a third higher.

Whenever an industry's output begins to approach technical capacity, it becomes profitable to purchase new and more efficient equipment to replace or supplement existing machines so that a certain amount of excess capacity seems to be inevitable in a free enterprise system.

Estimates of the level of industrial production in different lines under conditions of high-level employment during the 1950 decade are shown in the chart. They assume that past trends will continue so that they give only a rough idea of what would happen to output in each industry. Unpredictable shifts of consumer demand or new product developments might cause a big change in the pattern of industrial production. Such estimates are, nevertheless, useful in that they provide a clue to lines where the largest increases may take place.

None of the projected increases are so large as to tax our ability to provide enough capacity. This is not to say that there will be no bottlenecks because of lack of capacity for certain components, for instance. However, we should be able to make good in short order any deficiencies of that sort that may develop.

DEMANDS VERSUS NEEDS

Despite the substantial increase in living standards which would be possible with high-level production and employment in the 1950 decade, many U. S. consumers will be unable to buy enough of life's necessities to maintain themselves at a health and decency level. Almost 30% of all families would receive less than $1,000 a year cash income and one-third of this group would receive less than $500.

The 20th Century Fund asked a series of experts to estimate the quantities of food, clothing, housing, medical care, and other things needed to provide a standard of living at a minimum health and decency level. The experts also figured out how much it would cost to bring everyone expected to be below that standard in 1950 and 1960 up to the calculated level. In other words, the estimates show the cost of establishing a "floor" for consumption without disturbing the spending patterns of those who received more than enough income to satisfy the calculated minimum needs.

ESTIMATES OF NEEDS

Any estimate of "needs" must rest upon someone's opinion as to what constitutes "health and decency" in this day and age. In the case of food, the nutritional requirements of a minimum health and decency standard can be determined accurately. In other fields, such as housing and education, even the experts would disagree over what constitutes a minimum standard.

However, what is important is not the precise size of the estimates but their general magnitudes. The conclusion that we would have to spend about 50% more on medical care than we are likely to in 1950 is important even if the experts' appraisals of the deficit range from as high as 60% to as low as 40%.

To fill total needs calculated in this manner would require production of $200 billion of goods and services in 1950 or 13% more than the $177 billion which would be turned out with high-level production and employment. In 1960, estimated production would fall short of needs by 8%. Food accounts for the biggest share of the deficit but needs outrun demand by important margins in housing, medical care, education, and social security.

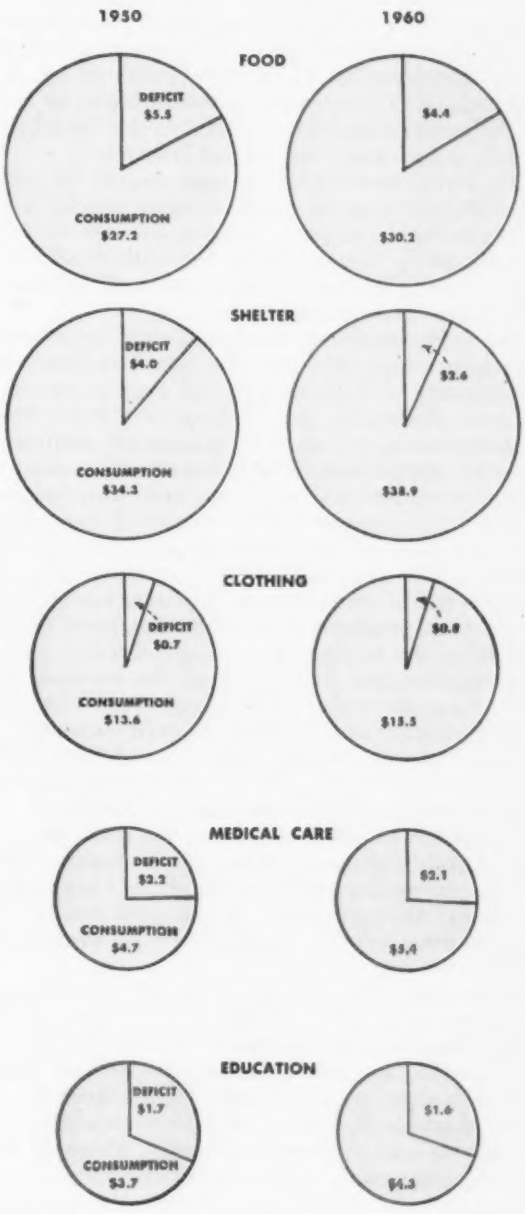
TO MEET ALMOST ALL OUR NEEDS

To provide nutritionally adequate moderate-cost meals for those unable to afford them would add $5.5 billion to the $27.2 billion that would actually be spent on food in 1950. This assumes no change in diets of those with adequate incomes despite the fact that many people in those groups do not eat what they should. If we all ate what we needed, we would consume twice as many fresh vegetables as in 1940, half again as much milk, more fruits and tomatoes; and we would eat smaller quantities of sugar, sirups, fats, and oils. This better diet would cost us less than we will actually spend for food in 1950.

So large a portion of our existing housing is unsatisfactory by any reasonable standards that it would take 10-15 years to provide everyone with adequate housing. One of the reasons why we don't have adequate housing is that many consumers cannot afford to pay enough rent to finance it. Estimated expenditures in 1950 for rent (including the estimated rental value of owner-occupied homes) would run to $14 billion as against an estimated need of $16.4 billion.

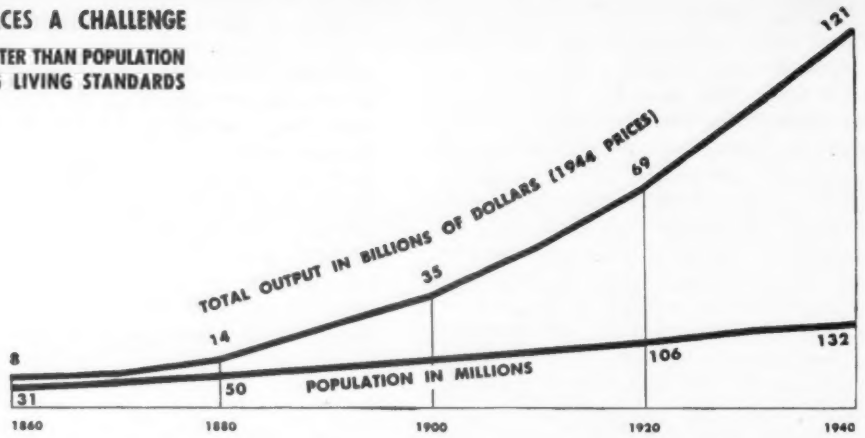
Vast advances in medicine have gone far toward eliminating many diseases and have brought about a steady improvement in the standard of health. However, large numbers of people in the lower income groups cannot afford adequate medical care. Moreover, to supply good medical care for everyone under the traditional fee-for-service basis would cost several times more than consumers have ever spent for medical services even in prosperous years. Development of an effective form of group medicine, however, would make it possible to provide adequate care at a great saving over present costs, according to the 20th Century Fund.

HOW CONSUMPTION WOULD COMPARE WITH TOTAL NEEDS
(Figures in billions of dollars)



THE U. S. ECONOMY FACES A CHALLENGE

PRODUCTION HAS GROWN FASTER THAN POPULATION GIVING PROMISE OF RISING LIVING STANDARDS



The major conclusion of the 20th Century Fund's survey of America's needs and resources is that we have reached a point where we can provide everyone with a decent living and most people with a living which, by any standards other than our own, is positively luxurious. With high-level employment, it would take only a 13% increase in total output in 1950, and an 8% increase in 1960, to lift everyone to a minimum health and decency standard of living.

We have more than enough industrial and agricultural capacity to support that much of an increase in total production. Lack of natural resources should not be a bottleneck, for with world trade on any sort of a reasonable basis we will be able to get all the raw materials we need.

The only limiting factor is the capacity of our labor force to produce. The 20th Century Fund assumes that productivity will advance at the average rate actually achieved during the past 9 decades (18%). But there is no technical reason why we cannot achieve an increase of more than 30%. That would make possible enough production to meet our minimum needs.

The U. S. economy has exhibited two dominant characteristics in the past century. Our productive capacity has expanded at a rate never approached elsewhere. But our economy has also been highly unstable. Our problem is to make the most of our unparalleled technological and productive know-how while minimizing the swings of the business cycle.

If we can meet that challenge, we can eliminate the specter of want and move on toward constantly rising living standards for everyone. Never before in history has a nation been so close to abolishing poverty and meeting the material demands of its citizens.

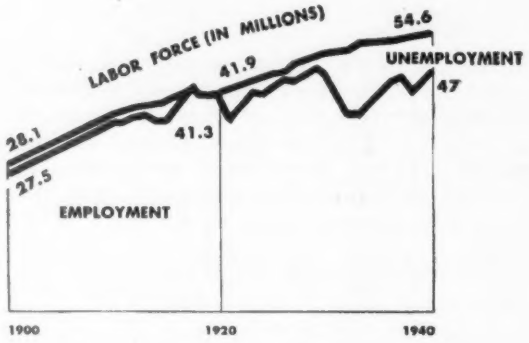
This is not to say that solving the problem of maintaining stable and expanding production would solve all our economic, social, and political problems. Nor is it to say that a solution of the problem of keeping our economic machine running on an even keel is at hand.

In the first place, the U. S. would not be a utopia even if we achieved the kind of high employment and production the 20th Century Fund is talking about. Many perplexing problems of how to best distribute our production would remain. Then there are a host of social and political problems which would still tax our efforts and ingenuity. Finally, there is the all-important question of how to maintain world peace.

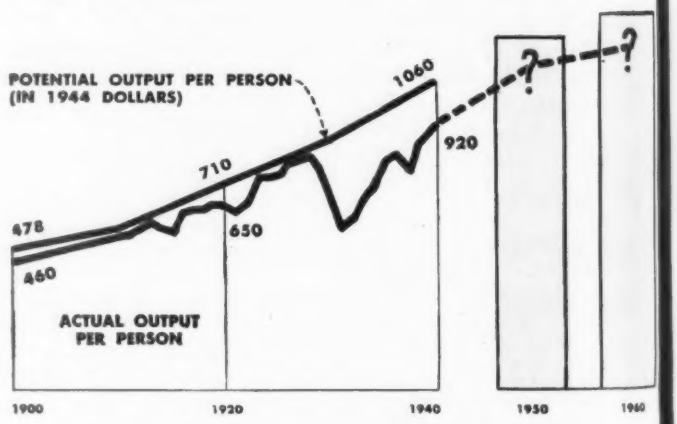
Most people would agree that the problem of maintaining high employment and rising living standards is still far from solution. Our ability to mobilize and direct our economic resources so as to keep our economy running on an even keel has lagged behind our ability to solve technical production problems. Each businessman, each worker, and each consumer must somehow learn to act differently in many ways than he has in the past if we are to solve our number one economic problem.

Just what changes in our economic life will be necessary no one knows. On our ability to find out these things and put them into practice in the next few years depends our success in meeting the challenge which the 20th Century Fund's study underlines. That challenge is that we have within our grasp the ability to eliminate actual want from the U. S. and to provide more and more things for better living for everyone.

BUT THE GROWTH HAS FOLLOWED THE BOOM AND BUST ROUTE INVOLVING LONG PERIODS OF MASS UNEMPLOYMENT



CAN THE ECONOMY PROVIDE STEADY EMPLOYMENT AND RISING LIVING STANDARDS?



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CARDING DETAILS
Need Close Attention

HIGHLIGHTS: *Recirculating-air systems have little effect on lap quality, Georgia mill men say—A vertical opener often causes cotton to curl—Fine-count clothing wire reduces neps.*

RECIRCULATING-AIR SYSTEMS in the opener and and picker rooms improve conditions of humidity and temperature but do not, in the majority of cases, significantly affect the quality of the picker lap, according to information revealed at the spring meeting of the Textile Operating Executives of Georgia. Only two mills reported that they have been able to keep lap variation within 3/5 oz. per yard.

Of the nine mills reporting on the use of recirculating-air systems, below, six stated that they obtain advantages, two prefer the use of dust houses, and one finds that the only advantage is that the outside of the opening building has less lint and dust to settle on it.

The use of a dust house is preferred at John P. King Mfg. Co., Augusta, Ga., it was reported from the floor. Lap variation is kept within 3/5 oz. at this mill. The only advantage realized from the recirculating-air system is the elimination of dust-house fires. The chief disadvantage is that dust is blown into the room when the screens are cleaned each 8 hr.

Operating Data on Recirculating-Air Systems

Mill No.	1	2	10	11	15	17	21	22	27
Lap (oz. per yd.)	14 3/4	14	16	.....	15	.....	15.3	14	.....
Running time (min.)	7½	7	7	8	7½	6½	7½	7½	7
Turning of filter screen	Int.*	Int.	Int.	Int.	Int.	Cont.**	Cont.	Cont.	Cont.
Type of beaters									
Front	Kirschner	Kirschner	Kirschner	Kirschner	Kirschner	Kirschner	Kirschner	Kirschner	Kirschner
Middle	.....	3 blade	2 blade			2 blade		Blade	2 blade
Back	2 blade	3 blade	Aldrich	2 blade	3 blade	Porcupine	3 blade	Buckley	2 blade
Speed of beaters (rpm.)									
Front	1286	1000	1200	1270	1400	1335	1089	1450	1255
Middle	.....	1025	1200	.....	.....	1210	.....	1475	1155
Back	1200	1025	1050	1280	1400	1020	1082	1050	1100
Speed of fans (rpm.)									
Front	1423	1200	.....	1570	1250	1445	1620	.....	.....
Middle	.....	1200	.....	.....	.....	1120	.....	.....	.....
Back	1300	1150	.....	1270	1250	1275	1350	.....	.....
Setting of beaters to feed rolls (in.)									
Front	1/8	3/16	1/16	1/8	.....	3/16	1/4	3/8	3/16
Middle	.....	5/16	1/8	.....	.....	3/16	.....	3/8	3/16
Back	.....	5/16	3/16	1/4	.....	3/16	1/2	3/8	3/16
Cleaning frequency									
Screens	Twice per mo.	.....	8 hr.	Once per wk.	24 hr.	24 hr.	24 hr.	8 hr.	Self-cleaning
Ducts	Twice per mo.	As needed	Once per mo.	Once per wk.	24 hr.	24 hr.	24 hr.	8 hr.	24 hr.

* Intermittent ** Continuous

VERTICAL OPENER. The use of a vertical opener in the same opening line with a No. 12 lattice opener and a Superior cleaner was discussed by 23 mills in the written reports. Three mills recommended that the vertical opener be placed before the other two machines, five recommended that it be placed between them, and seven preferred to place it after them. One mill indicated that a vertical opener should be used and seven stated that it should not be used in the opening line with the other two machines.

Mills Nos. 7 and 21 reported that they have found the vertical opener unsatisfactory because of its tendency to curl the cotton. Mill No. 21 is not using the machine at present, and Mill No. 7 is considering removing it from its opening line.

Mill No. 11 wrote: "We have a vertical opener in the same line with a No. 12 lattice opener and a Superior cleaner, and we like it very well. This layout is the best we have tried. The vertical opener runs at a speed of 620 rpm., feeding approximately 1,700 lb. of cotton per hr."

At the Milstead (Ga.) Plant of Callaway Mills, two lines of opening process approximately 1,200 lb. per hr. each, it was reported from the floor. The vertical openers in these lines were removed because they caused the cotton to curl.

The old layout consisted of blending feeders, No. 12 lattice opener, Superior cleaner, and vertical opener. The vertical opener was removed and a second Superior cleaner, running in tandem with the one already in the line, was installed. Besides reducing the amount of curled cotton, this layout also gave better opening and blending of the stock.

The vertical opener has proved suc-

A New Deal "In the Cards"

SUN TEXTILE PROCESSING AID...

Cuts Down "Fly" in Asbestos Mill, Improves Spinning Qualities, Increases Yield of Finished Yarn

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A Sun Engineer was consulted. He recommended a processing oil specially refined for asbestos fibres. A quantity of this oil equal to ¾ of 1% of the weight of the asbestos fibre blend was applied at the blending pickers and tested for one year.

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INDUSTRIAL PRODUCTS

cessful at Exposition Cotton Mills Co., Atlanta, Ga., J. C. Edwards, Jr., reported at the meeting. Four duplicate lines of opening are used at this mill. Each line consists of six blending feeders, a Superior cleaner, vertical opener, No. 12 lattice opener, and Centrif-air machine.

SLIVER IN CANS. Answers from 27 mills indicate widespread efforts to increase the amount of sliver placed in cans, both at the card and the drawing frame. Eighteen mills use some means for compressing sliver, and most of these mills increase the ratio between the tube gear and turntable so that approximately 30 coils of sliver per layer are placed in the can. The average increase of card sliver placed in cans for a number of mills that reported was 23.21%.

Seven mills prefer to change adjustments on the coiler mechanism, rather than to compress the sliver, in order to place more sliver in the can. These mills slow the turntable and pay close attention to the bore of the coiler trumpet.

Mill No. 13 wrote: "To increase the amount of card sliver per can, adjust the speed of the can to put the maximum number of coils per layer (about 30 coils for 63 gr. sliver). Adjust the turntable so that the coiler lays the sliver against the side of the can. Use a 1-in.-diameter hole in the tube gear, instead of a 1¼-in. or larger hole. Use a trumpet of the correct bore for the weight of sliver, calculated by the formula: square root of sliver wt. in gr. x 1.42 x 0.015625."

PERFORATED SCREENS. It was generally agreed that perforated card screens are superior to rib screens. Of the twelve mills that sent in written answers to this question, ten have found definite advantages in using the perforated screen and two have not noticed much improvement over the rib screen.

Advantages cited by different mills for the perforated screen include:

1. Less fly waste
2. Lower quality of waste
3. Fewer repairs
4. Better settings
5. Fewer neps
6. More even sliver
7. No static.

Disadvantages pointed out are:

1. Increased amount of flat and cylinder strips
2. Possibly lower yarn-breaking strength

Mill No. 3 wrote: "We have 35 cards equipped with perforated screens,

(Continued on page 222)

Considerable mill-operating data were given in answer to 12 questions on carding and 13 on spinning, winding, twisting, and warp preparation at the spring meeting of the Textile Operating Executives of Georgia, in Atlanta, Mar. 22.

The 25 questions were sent to mills prior to the meeting, and written answers were received from 29 mills representing 1,388,436 spindles. The written answers and parts of the discussion from the floor relative to carding are condensed here. Information on spinning, winding, twisting, and warp preparation appear elsewhere in this issue.

Members elected to the executive committee of the Textile Operating Executives of Georgia were:

H. M. Jackson, plant manager, Lumite Div., Chicopee Mfg. Corp., Cornelia, Ga., full term (2½ yr.), succeeding himself;

Leon Macomber, manager, Aldora Mills, Barnesville, Ga., full term, succeeding **W. E. Vecsey,** whose term expired;

B. W. Whorton, superintendent, Dixie Cotton Mills, LaGrange, Ga., full term, succeeding G. H. Smith, whose term expired;

Gene Robbins, superintendent, Griffin Mill, Thomaston Cotton Mills, Griffin, Ga., one year, succeeding B. P. Albright, resigned.

Recommended Sequence of Vertical Opener, No. 12 Lattice Opener, and Superior Cleaner

Mill No.	1st	2nd	3rd	4th	5th
1	Superior	Vertical	No. 12 lattice	.....	.....
2	No. 12 lattice	Vertical	Superior	.....	.....
3	Vertical	No. 12 lattice	.....	.....	.....
4	No. 12 lattice	Superior	Vertical	.....	.....
5	Blending feeders	No. 12 lattice	Superior	.....	.....
6	Blending feeders	Superior	Vertical	No. 12 lattice	Centrif-air
7	No. 12 lattice	Superior	Vertical	.....	.....
9	Blending feeders	Lummus mixer	No. 12 lattice	Vertical	.....
11	Blending feeders	Superior	Superior	Vertical	No. 12 lattice
13	Blending feeders	Vertical	Superior	No. 12 lattice	Superior
18	Bale breaker	Superior	Vertical	Centrif-air	No. 12 lattice
20	Vertical	No. 12 lattice	.....	.....	.....
21	No. 12 lattice	Superior	Centrif-air	.....	.....
24	Bale breaker	No. 12 lattice	Superior	Vertical	.....
26	No. 12 lattice	Superior	Vertical	.....	.....
27	No. 12 lattice	Superior	Vertical	.....	.....
29	No. 12 lattice	Superior	Vertical	.....	.....

Frequency of Card Grinding

Mill No.	Cylinder (hr.)	Doffer (hr.)	Flats (hr.)	Production (lb. per hr.)	Lap wt. (oz. per yd.)	Sliver wt. (gr. per yd.)
1	190 to 200	190 to 200	190 to 200	16	14.75	59
2	480	480	480	14	14	60
3	300	300	300	16	15.40	67
4	240	240	240	.....	14	62
5	220	220	220	15.50	14	60
6	288	288	600	11	14.50	62
7	175	175	175	.....	.....	.....
8	336	336	336	.....	14	65
9	147	147	147	19	14	61
10	200	200	200	20	16	60
11	234	234	234	.....	13.50	54
12	312	648	648	.....	.....	.....
13	190	190	190	14.50	14	63
14	220	440	220	11.50	13.70	46
15	212	.....	212	12	15	52
16	360	360	360	14.10	14.50	50
17	312	312	312	.....	14	57
18	200	200	200	17	15	65
19	200	200	200	.....	13.5	50 and 60
20	Do not grind	Do not grind	720	12.50	14	55
21	210	210	210	12	15.30	48
22	400	400	400	14	14	55
23	151	302	600	.....	14	57
24	2,800 lb.	2,800 lb.	2,800 lb.	.....	15	62
25	216	216	216	7.40	15.75	48
26	144	144	288	19	16.32	66
27	80	216	216	8 to 19	.....	.....
28	276	276	728	12.5	14	58
29	200	200	200	13.85	14	62

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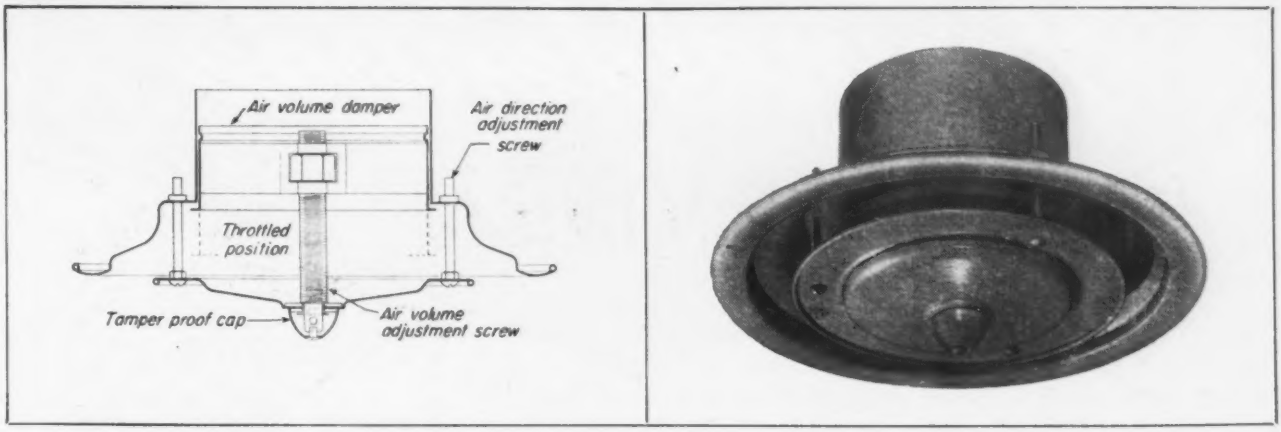


Adjustable air diffuser can be throttled down to reduce volume. Direction is controlled by raising or lowering the center element.

Adjustable AIR DIFFUSER Can Meet Changing Conditions

HIGHLIGHTS: *Air distribution in mill becomes problem as production per square foot of floor space is speeded up—Ducts may discharge through slots or grills—High-velocity, 360° diffuser adjustable for volume and direction used in prominent mills.*

By HENRY A. BAKER

Vice President, W. B. Connor Engineering Corp.

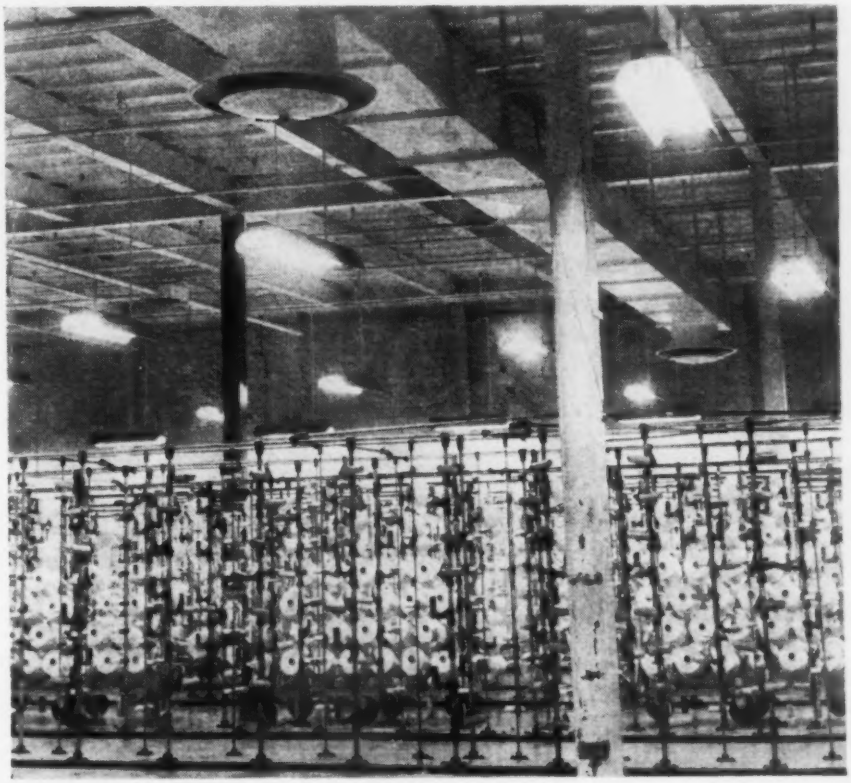
PROPER AIR DISTRIBUTION, always a matter of concern in textile plants, grew in importance with the advent of acetate and viscose rayon, the handling of which presented many new problems. At first, production per square foot of plant space was roughly the same as that of woolen and cotton spinning. With increased production, however, former air-distribution practices were, in most instances, found inadequate. As a result, various methods of introducing air for cooling, humidification, and ventilation have been tried.

One means of delivering air used by many rayon manufacturers, and still in use in some plants, is the slotted-duct design. The wide supply ducts of this system are provided with slots at the corners which project thin air streams at predetermined angles of flow toward an entrance slot in the spinning frames near the floor.

Another and still common method involves the installation of double-deflection-type, adjustable air grilles on both sides of the main and branch supply ducts. These grilles have two sets of blades or vanes which may be adjusted to provide four-way directional air discharge.

A third method which has been tried is the use of fixed-type, high-velocity, ceiling diffusers, each with

(Continued on page 216)



Diffusers on distribution duct over warping creel at Front Royal, Va., plant of American Viscose Corp. The center element is lowered for horizontal air discharge.

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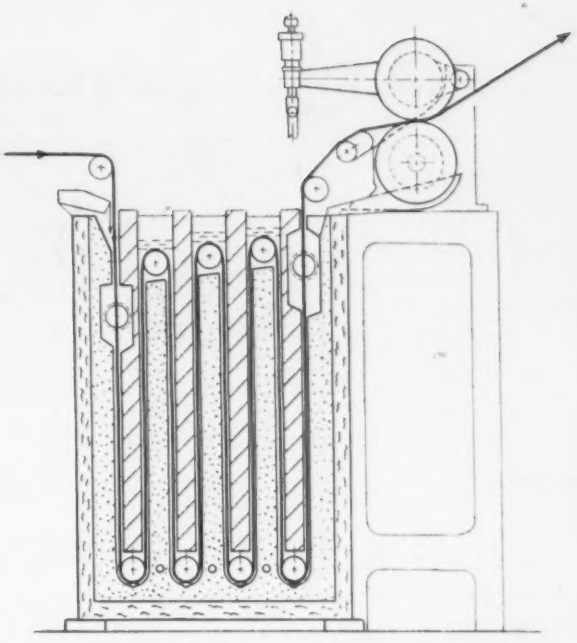
Williams Unit Effects Changes in DYEING TECHNIQUES



Cross-sectional drawing of Williams unit illustrates method used to reduce liquor to a minimum. Small size fabric channels extending into steam chest are almost filled by removable baffles and provide only small space for fabric and liquor.

HIGHLIGHTS: *Evener shades of vat colors frequently obtained by predrying fabric before reduction—Light and medium vat shades produced easily by reduced, re-reduced method—Type of dryer important—Proportions of dyes in bath makeup must take into account relative exhaustion rates of dyes—Unit works well in washing and scouring operations.*

By S. H. WILLIAMS
General Dyestuff Corp.

WHETHER VAT-DYED FABRICS should be predried, either wholly or partly, before reduction has been questioned many times. Based on experience, the following conclusions have been reached:

On many constructions, there are advantages in the drying of vat pigments before reduction. Fabrics that are closely woven, and particularly those with tightly twisted yarns, such as ducks, twills, drills, gabardines, poplins, etc., are dyed to a more solid appearance when the vat pigment is applied and the fabric predried before reduction. On the other hand, there are many open constructions of cottons and mixed-fiber qualities that dye to a disadvantage when predried. From an operational standpoint, complete drying is more desirable than semi-drying. However, many highly productive ranges are satisfactorily operating at high speeds, when the drying capacity does not permit full drying; and these machines are producing excellent results.

Aside from appearance of the dyed fabric, better control is maintained in the reduction unit when dry cloth instead of wet is entered. The reason dry cloth gives better results is that normally a dry fabric takes up, at an even rate, a greater percentage of the reducing liquor, and the bath is replenished at a faster rate of speed. It has always been extremely difficult, in processing wet material through a box containing a small volume, to control the moisture replacement to a definite and reliable degree.

WILLIAMS UNIT. The original idea of the Williams unit grew out of a need for a small machine capable of dyeing a wide range of vat colors by a suitable continuous process. Many light and medium vat shades can be and are being run successfully and satisfactorily on the machine by adhering to the reduced, re-reduced method of dyeing, which is relatively a simple process with the proper pad set-up. When using the units for re-reduction, accelerated temperatures are used to a decided advantage for the re-reduction operation on many cotton fabrics. There are styles and qualities for which it is advantageous to apply the pigment first, rather than reduced color, even in light shades, in order to produce a more solid, better penetrated dyeing.

Algosols, used for production of light and medium shades, lend themselves to continuous operations. The colors may be padded and developed successfully on ranges.

High-velocity forced-air dryers tend to produce a reediness on open and thinly woven uneven fabrics. A form of color migration, which is not completely overcome in the reduction baths, takes place in such machines. Can-drying of pigments on many shades and many constructions may be successfully carried out if certain precautions are taken. In such cases, the cans certainly should be seamless, and, for best results, the heat graduated from stack to stack. If thickening agents are used, as is often the case, can drying produces the hazard of pigment colors picking off on the cylinder surfaces, and dyeings having a poor surface appearance result. If drying is to be carried out, the most suitable means is the use of an Andrews & Goodrich Algosol-type dryer, which is best put in range with the pad and reduction units.

Any plant having available any form of a continuous open-box range may add to it, without too much trouble, the units for reduction and an air dryer. A single unit may be used satisfactorily for reduction purposes, provided high production speeds are not called for in the dyeing of heavy shades. Two units piped together, acting as one reduction medium, allow for maximum speeds and faster running times.

DYE FORMULA IMPORTANT. As the behavior of vat colors varies considerably with regard to their solubility and speed of fixation, the correct for-

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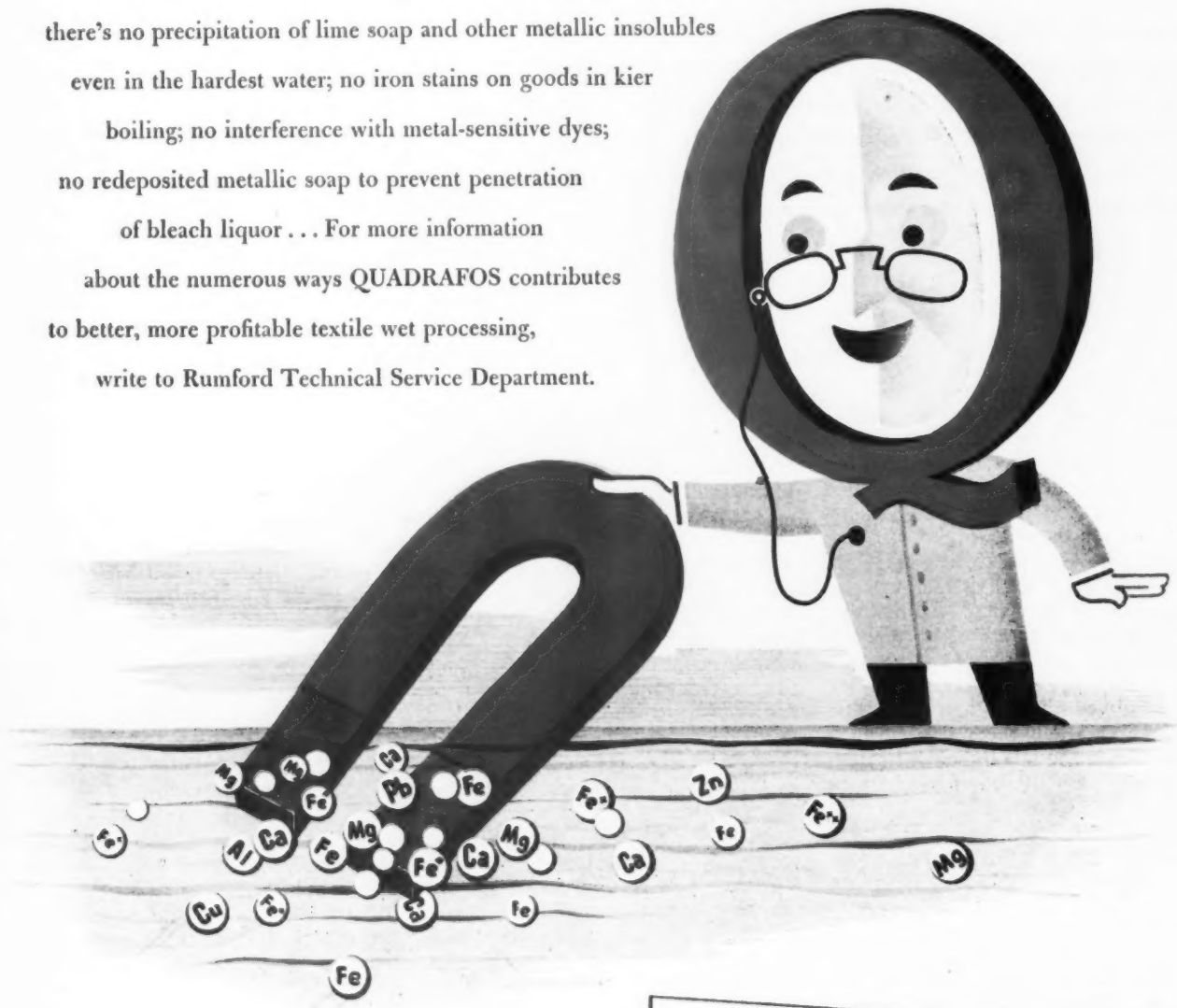

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mula should be used in each case if maximum color values are to be developed. A few general rules in this respect are as follows:

Easily solubilized vat dyestuffs, such as the colors falling in the class of the IW and IK types, require the use of fairly large quantities of common salt to be added to the reduction bath. This is done to prevent or to minimize the extent of bleed-off of these colors while the color on the cloth is being reduced. The quantities of caustic soda used on these classes of colors is much lower than those required for the use of the IN brands. A proper balance between alkalinity and the amount of hydro used is an important factor, particularly with respect to the dyeing of the Indanthrene Blue brands, such as the Indanthrene Blues of BCS types. To produce maximum results with this dyestuff, the concentrations of caustic soda should be greatly increased as compared with the other IN types of colors; the amounts of hydro should be decreased. An excessive amount of hydro, at elevated temperatures, breaks down this dyestuff rather rapidly in the presence of strong alkaline solutions. By the use of glucose, or other suitable reducing sugars, it has been found practical to dye this color with very good results and to produce brilliancy of shade, proper color value, and the necessary fastness. The glucose, or reducing sugar, may be padded in with the vat-pigment colors.

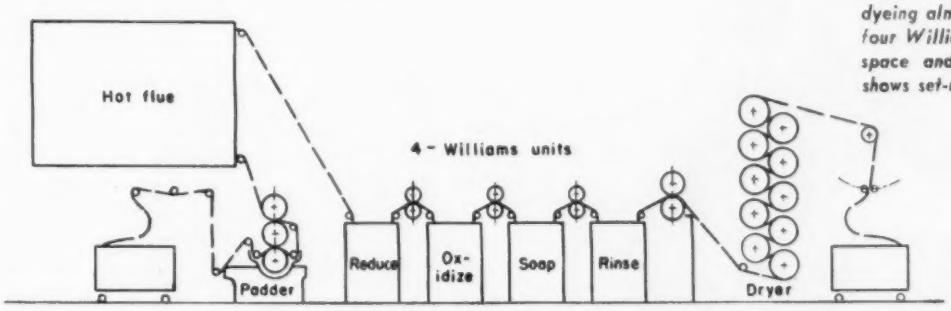
PROPORTIONS OF DYE ADDITIONS. It is common practice in a number of cases to add a small quantity of pad liquor to the unit before the start of dyeing operations. When using a formula of dyestuffs having the same relative exhaust and solubility, this practice may be carried out satisfactorily; however, it is not always possible to produce a shade by using dyestuffs with properties close enough to permit following this procedure. An example of color charge is as follows:

Should the pad liquor contain 6 oz. per gal. of Indanthrene Olive TA and 3 oz. per gal. of Indanthrene Orange 3GA, it would not be proper to take a gallon of this pad liquor and add it to the unit. The unit charge would be close to being correct by addition of a separate weighing of 6 oz. Indanthrene Olive TA and 6 oz. Indanthrene Orange 3GA; the amount of olive equals 1 gal. pad liquor, but the orange is double the ratio contained in the pad. Thus, the slow-exhausting color is added in excess of the ratio of the fast exhausting color. Another important factor in the maintaining of good shading is keeping the working liquor in the reduction units at all times at an even height.

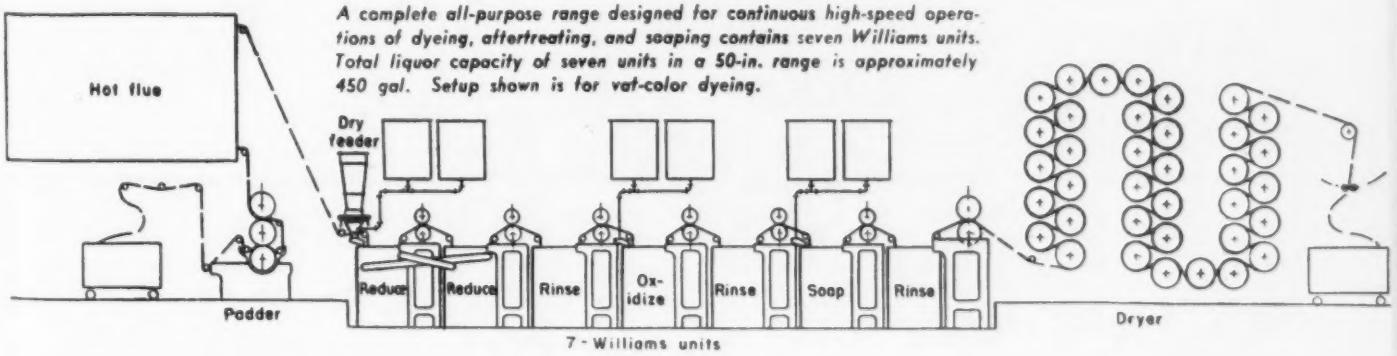
Up to this point has been mentioned mostly the continuous handling of cotton fabrics. The continuous handling of synthetic fabrics and types of rayon mixtures is fast being adopted for highly productive purposes, and vat colors are the answer to obtain satisfactorily washable dyes.

EXPERIMENTATION NECESSARY. The technicalities of application on many qualities represent a problem that, in

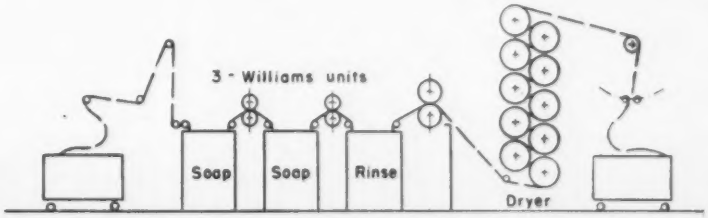
Short continuous-dyeing range suitable for dyeing almost all classes of dyestuffs contains four Williams units; it requires limited floor space and is extremely flexible. Diagram shows set-up of the unit for vat-color dyeing.



A complete all-purpose range designed for continuous high-speed operations of dyeing, aftertreating, and soaping contains seven Williams units. Total liquor capacity of seven units in a 50-in. range is approximately 450 gal. Setup shown is for vat-color dyeing.



Compact soaping range consisting of three Williams units and dry cans requires a small amount of floor space and is said to be ideal for soaping off prints and plain shades, for chemical removal, etc.



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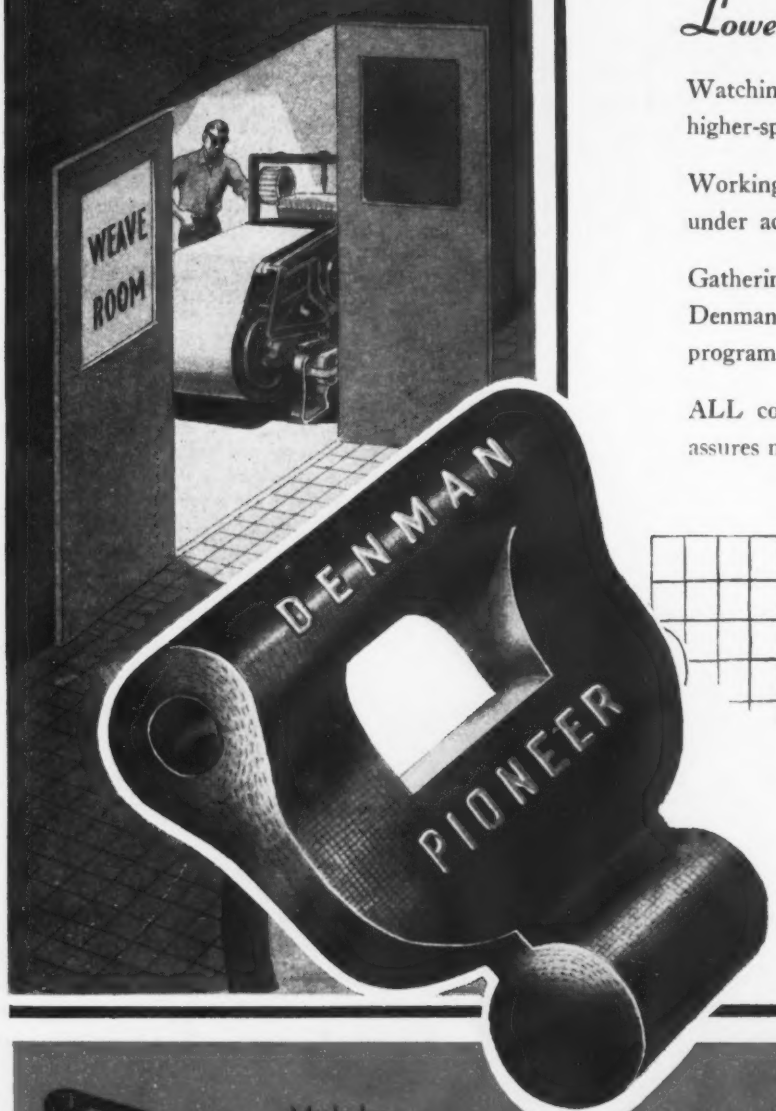

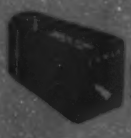

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many cases, requires considerable experimentation before dependable practical formulas can be reached. The many varied constructions and small dye lots have retarded, to some degree, the continuous processing of many rayon and other synthetic specialties. Small lots can be handled economically by using Williams units. These specialty fabrics, in many cases in the future, will become staple lines; and when large lots are available to the dyer and finisher, those plants not equipped with continuous-processing equipment will have a difficult time to compete with plants having such installations.

A number of rayon fabrics and mixtures of synthetics are now being processed with vat colors in the South, and the dyeing speeds are equalling those of many cotton fabrics.

In the dyeing of mixed-fiber constructions, the ability of a dye machine to function over a wide range of temperatures is extremely important. There are many color combinations and fiber effects that may be produced in temperature ranges of 170° to 180° F. that would not be possible when working at temperatures of 200° to 212° F. Examples of this, evident in the dyeing of fabrics containing acetate, show the acetate white and still produce heavy shades of vat colors in the other fiber. In the dyeing of wool mixtures, temperatures must be regulated against time factors to a point to prevent degradation of wool and at the same time to be within a range that will properly reduce and reflect the true color values of the dyestuffs used.

There are many dyeing operations on many qualities of fabrics when fiber effects are desired rather than the full reflection of the color values of the dyestuff. In cases of this nature, it may be necessary to add to the reduction unit retarding and emulsifying agents, such as Peregal O, which will tend to level up many differences of affinity between warp and filling or which will aid the differential in affinity between two different types of fibers. Examples in the handling of mixed fibers of certain constructions have shown that, should the dyestuff be fixed on the fabric as padded, the resultant appearance would not be solid in character. By the use of retardants, or emulsifying agents, the vat colors can, in certain cases, be leveled from one fiber to the other to produce more solid effects.

DIRECT-COLOR DYEING. During the past year, there has been considerable experimentation carried out with regard to the application of direct colors on William units. Many qualities of fabric that have been run on this equipment have surpassed in appearance the same constructions when dyed by other methods. An example of a particular quality is an 80% spun rayon, 20% wool fabric. This fabric, when dyed on boxes or reel machines, has a tendency to show up warpiness, mill imperfections, and cloudiness in some colors. These same shades, produced on the units by first padding on the direct and acid colors in the pad plus further fixation in a common-salt bath, dye in the unit to a much more level and solid appearance. It is extremely important, when handling direct dyestuffs, that the proper combinations be selected from a standpoint of rate of exhaust.

On fabrics and shades which may be dyed continuously with commercial colors, considerable labor savings may be accomplished; and in many cases, a quality of work can be produced that is superior to conventional dyeing methods. An example of time saved was given in a recent report on the dyeing of 160 pieces of the above-mentioned quality (80% spun rayon, 20% wool) which were processed on a small unit range in 3½ hr. running time, using three men. With regulation dye becks, this lot would have taken eight machines and consumed 8 hr. of labor.

Sulphur dyes may be applied by the unit principle in either of three ways:

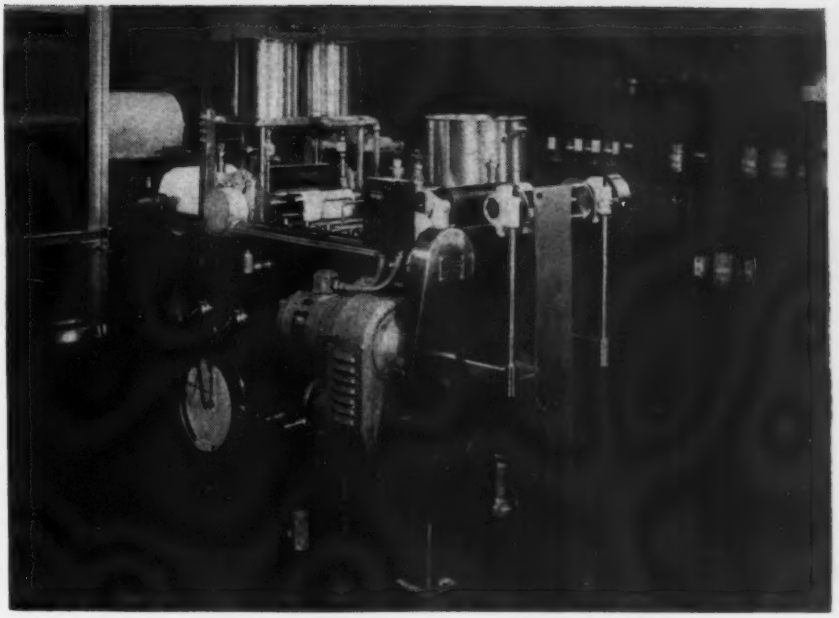
1. The unit may be used in the same manner as one would use a three-roll pad, and there are many advantages when the work is performed in this manner. The maintenance of boiling temperatures is relatively simple in the unit because it is completely jacketed and insulated; and the cloth, being kept under immersion rolls at all times, does not oxidize prematurely while in the dyebath. The ratio of contact of cloth with the small volume of liquor is another decided advantage in sulphur-color dyeing.

2. Sulphur colors may first be applied on a three-roll pad and then entered into the unit for the addition of further color, or for further fixation, in the same manner as one would use a booster bath.

3. Dispersed sulphur colors may be padded and then fixed in the unit on the same order as in dyeing vat colors.

NAPHTHOL DYES. The units have worked out very satisfactorily for dyeing naphthol colors, in which process the unit is used for the coupling bath. Units are so constructed that cold water or brine may be circulated in the jacket in order to produce and maintain temperatures sufficiently low to prevent decomposition of the solutions used in this operation. Added flexibility for very short runs may be achieved by utilizing part of the one well near the delivery end of the machine. As each well holds approximately 15 gal. of liquor, a working bath may be used which contains from three to 12 gal. of liquor by varying the liquor depth in this well. In many

(Continued on page 190)



Laboratory model Williams unit, as shown here, is used for investigating color formulas and methods of reduction; it permits experimentation on practical scale without tying up production equipment.

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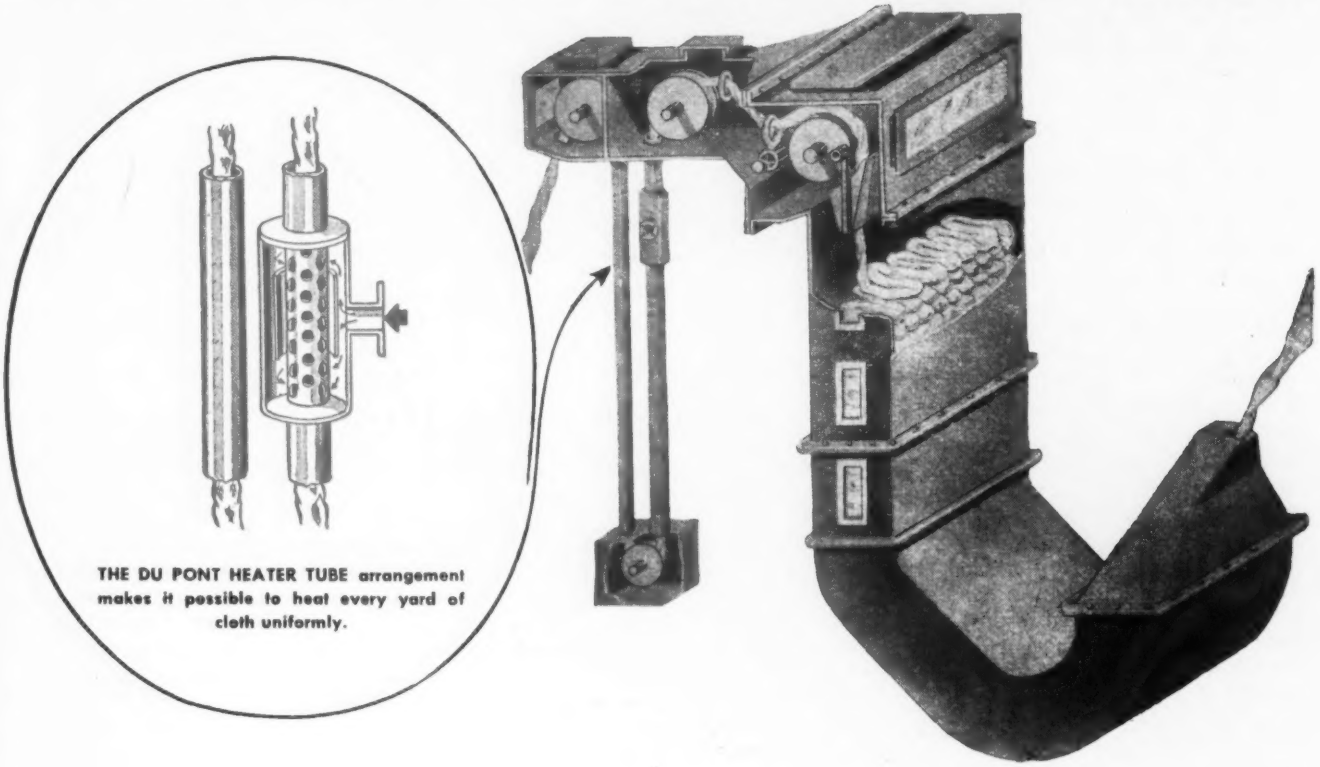

THE DU PONT HEATER TUBE arrangement makes it possible to heat every yard of cloth uniformly.

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Let us tell you more about these systems and how they can be used to meet your requirements. Technical advice on design, installation and operation of units to meet your specific requirements can be obtained by writing or calling: E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Department, Wilmington 98, Delaware.

Cotton-Textile Industry Launches PUBLIC-RELATIONS Program

HIGHLIGHTS: *Independent committee, including North and South mill men, guides a broad movement to bring understanding of industry to employees and to correct false ideas current among general public—Effective staff has been recruited—Funds provided on spindle basis—All customary channels for news distribution will be utilized.*

MILLIONS OF AMERICANS are learning more about the cotton-textile industry than they ever knew before, and thousands of textile workers are gaining a better understanding of the importance of the industry and their own jobs, as the result of a program begun quietly a little more than six months ago.

Designed to correct false ideas about the industry and to acquaint people in all parts of the country with its technological and social progress, the program is sponsored by nearly 300 textile manufacturing firms and is headed by an industry-wide committee of leading mill principals and executives.

POLL DISCLOSED MISCONCEPTIONS. The history of the program goes back more than a year, although it was not launched officially until last October. First step in the preliminary work was a survey on a nation-wide scale to determine public attitudes toward textile mills. This poll, which was conducted by Opinion Research Corp., of Princeton, N. J., required six weeks and covered all 48 states. The findings fill a book of considerable size but can be boiled down to the major fact that people either know very little about the cotton-textile industry—less than about almost any other industry—or hold gross misconceptions based on out-dated and erroneous information. To shape up suitable procedures, a committee of representative mill executives from North and South was formed with Luther H. Hodges, of Marshall Field & Co., and G. Ellsworth Huggins, of Martel and Henrietta Mills, as co-chairman.

Funds for the program were contributed individually by mills at a rate of 1¢ per spindle. When an operating budget of $100,000 was assured for the first year, the Cotton Mills Industry-Wide Committee on Public Relations was named as an independent administrative agency and the program was inaugurated last Oct. 1 by Dudley, Anderson & Yutzy, public relations counselors, New York.

The operating plan was devised to function in two directions, both within and outside the industry. A schedule of activities was laid out for the internal phase of the program, and, for the external operations, an agency known as the Cotton Mills Information Service was set up as the focal point, with a field organization to work through the mill regions on both phases of the plan.

THE WORK TO DATE. The program is already well under way. A report covering the first six months, just issued to the sponsoring firms, shows that activities are being expanded at a more rapid rate than is usual at the start of a public-relations program of industry-wide scope. According to the report, work to date includes: More than 200 personal calls on newspaper editors and mill owners and executives in both the South and New England to explain the purposes of the program; 14 public-relations clinics for mill officials, ten in the South and four in New England, with a total attendance of more than 300 executives; dozens of newspaper articles and photographs, background information and special items issued to hundreds of newspapers; preparation of special material for public distribution in booklet and pamphlet form.

Work is under way on a number of other activities, including developments in the field of radio broadcasting and the interesting of free-lance magazine writers in exploring the industry for articles for general publication. Public meetings, as well as a continuation of the public-relations clinics within the industry, and public exhibits are still other projects included in future plans.

Almost all of the key persons who are conducting the program are former newspaper editors and writers. Pendleton Dudley, founder of and senior partner in the firm, who is serving as counsel for the program, prefaced his long public-relations career with newspaper work. Thomas D. Yutzy, executive director of the program, was engaged in newspaper work in the mid-West and New York before entering the field of public relations. Farley Manning, chief of the press section and in direct charge of the Cotton Mills Information Service, was formerly editor of various New England newspapers. Martin Powers, appointed New England field editor, was assistant city editor of the *Boston American* when he became associated with the program. Henry Lesesne, Southern field editor, was for some 20 years with the Associated Press and became one of the best known newspapermen of the South. Assisting him is T. M. Davenport, who also served with the Associated Press in the South for about 20 years until he opened an independent public-relations service in Atlanta, Ga. The organization has also added the services of Mrs. Mildred Barnwell Andrews, formerly secretary of the Southern Combed Yarn Spinners Association and widely known throughout the industry.

THE MEN BEHIND THE PROGRAM

The Cotton Mills Industry-Wide Committee on Public Relations which is administering the industry's new public-relations program is composed of the following:

***Chairman*—G. Ellsworth Huggins, Martel and Henrietta Mills**

***Secretary*—George Nichols, Dwight Mfg. Co.**

***Treasurer*—Paul B. Halstead, 320 Broadway, New York, N. Y.**

***Members*—Fuller E. Callaway, Jr., Callaway Mills; Charles A. Cannon, Cannon Mills; James A. Chapman, Inman Mills; Donald Comer, Avondale Mills; Norman E. Elsas, Fulton Bag & Cotton Mills; B. B. Gossett, Chadwick Hoskins Co.; P. H. Hanes, P. H. Hanes Knitting Co.; Gordon Harrower, Wauregan Mills; C. C. Hertwig, Bibb Mfg. Co.; Luther H. Hodges, Marshall Field & Co.; George H. Lanier, West Point Mfg. Co.; Harvey W. Moore, Brown Mfg. Co.; Paul A. Redmond, Alabama Mills; William A. L. Sibley, Monarch Mills; Donald B. Tansill, Pepperell Mfg. Co.; Paul B. Welles, Pequot Mills.**

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Replacement of LUG STRAPS Influences Weaving Results

HIGHLIGHTS: *Power straps and lug sticks also play important part—Some bang-offs attributable to these parts if worn or poorly installed—All available in variety of materials.*

By H. E. WENRICH

A WEAVE-ROOM'S PRODUCTION depends to such a great extent on lug straps, lug sticks, and power straps that it is almost axiomatic that these parts should be carefully chosen and frequently checked.

Unfortunately, to many a fixer these parts are no more than a means of controlling picking or a means of holding the power strap in place.

When a lug strap needs replacement, the fixer often attaches the new one into a position and starts the loom without any further checking for proper adjustment. If the loom runs without a bang-off within a few minutes, the job is often assumed to be satisfactory; and the fixer moves off to his next task.

That such casual treatment can be costly is shown from recent experiences with lug straps, for instance. To begin with, there are more than a few types of lug straps available and choice of the correct one is a matter for study. Types include:

Canvas, cotton impregnated with **rubber, hard** rubber, fiber, hickory in a long U-design, and a combination in which a lug strap is composed of two lengths of hickory secured together at one end with a leather plug.

Canvas is more widely used for short lug straps and for long lug straps used on most cotton looms. The cotton-and-rubber combination is popular in woolen and worsted weaving as well as to a certain extent in synthetic-yarn weaving. The hickory strap has long been used in silk mills and rayon plants and is used to a lesser degree in other mills.

In strength, canvas is slightly inferior to the cotton-and-rubber combination. Some mill men believe that the lug stick and strap should have some elasticity as well as flexibility and so favor canvas which has both. Other mill men prefer the canvas lug strap for its elasticity but choose a wood or fiber lug stick to avoid flex. Others avoid both elasticity and flex by using hickory or fiber in both strap and stick.

The variety of lug straps and sticks available will give nearly any desired degree of strength or springiness. A mill's purchasing department, however, generally looks at loom parts from the cost angle. How much does a canvas strap cost? What length of service will fiber give compared to wood? Is hickory more economical than other competitive materials?

Service, initial costs, or cost comparisons cannot, of course, be measured by themselves. Consideration must be given to loom down-time, cloth quality, and loom troubles directly or indirectly attributable to lug straps, lug sticks, and power straps.

SPRINGINESS. Loom width and type of fabric occasionally govern the springiness desired in the loom picking mechanism. For instance, a wide loom or a heavy weave requires more power in picking. For such conditions, a new canvas strap may be rather stiff, but after a few days will develop a certain amount of give or elasticity which is held desirable by some fixers. As power is started through the cam point, the shock of the sudden jerk applied to the picker stick is cushioned somewhat by the canvas (or by cotton-and-rubber) lug straps and sticks.

Flexibility in the picking action is usually desirable when the lay is front center, but not during the picking, as is often believed. On some loom types, when the lay swings front center, the picker stick and picker often bind through action of the lug stick in

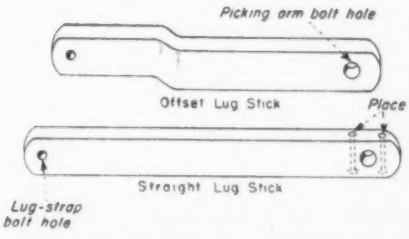


Fig. 1. Both of these types of lug straps can be benefited by use of rivets as shown.

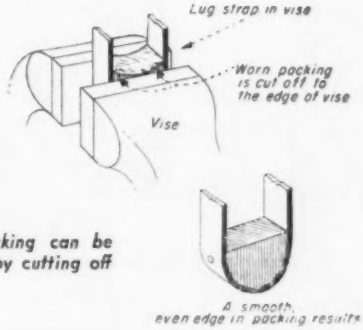
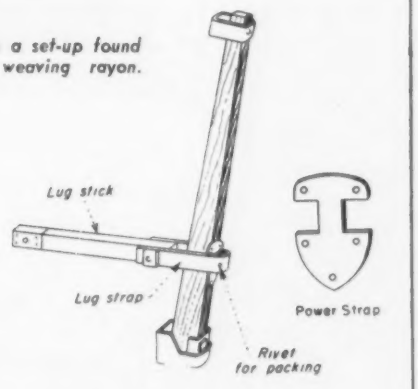


Fig. 3. Worn lug-strap packing can be renewed for additional use by cutting off uneven area as shown.

Fig. 2. Shown here is a set-up found suitable for looms weaving rayon.



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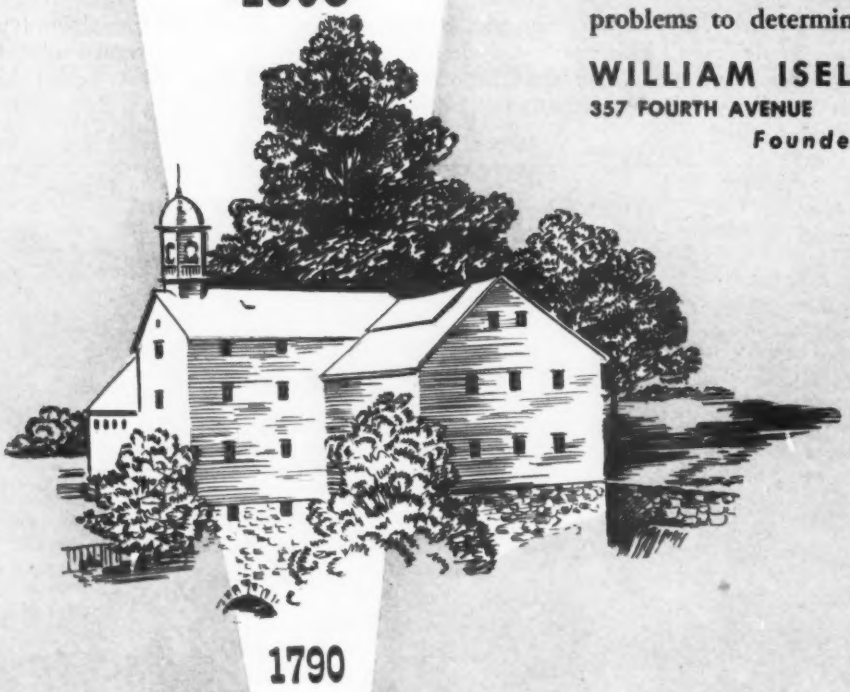

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swinging off center. After a canvas lug stick has been in service for several days, it develops a softening of the pressed layers, allowing the stick to flex as the lay sweeps forward. Thus, the picker moves without binding; and the stick swings back to check more evenly.

However, when canvas softens, it can also be a source of trouble through loss of pick. Even though the power strap and the lug strap may have been gaged and the pick cam and cone crank-arm throw checked, the loom will slam off if the canvas gives too much when picking takes place. For this reason, some mill men prefer using a wood or fiber lug stick with elasticity secured through use of a canvas lug strap.

The writer has had experience with many types of lug straps and sticks over a long period of years and has come to prefer wood lugs rather than fiber when conditions require an inflexible stick. The wood sticks are approximately one-fourth the cost of similar fiber sticks, and will usually outwear the fiber. After a few months' use, fiber weakens near the picking arm bolt hole and tears free. Wood also weakens near this hole, but will usually wear into an unbroken oval shape.

One textile supply firm has vastly improved the wood lug stick by placing two rivets—one in front and one behind—near the picker-arm bolt hole. If fixers are supplied with wood sticks minus the rivets, they can readily drill two ¼-in. holes through the stick as shown in Fig. 1 and insert stove bolts.

The two lug straps shown in Fig. 1 are available in various lengths and can be adjusted according to pick measurements. The off-set stick is excellent for looms when the picking stick and picker cause binding on the lay swing to front center. Should a straight stick bind, rub a loom part, or wear too quickly, it may be possible to eliminate the trouble through off-set sticks.

When the lug stick shows undue wear, the position of the picking arm on the picking shaft should be inspected. This arm should be set up close to the picking-shaft bearing. Even a distance of ½ in. from the bearing will cause more wear to develop in the lug stick and, in time, split the lug stick.

Good judgment exercised by the fixer and the purchasing department will lower lug-stick replacement costs. The fixer must reason that if the off-set stick rubs the box-lifter rod or related parts or the lay sword, then the need for a straight stick is obvious.

Fig. 4. Note exposed rivet in lug strap which cut into lug. Packing in lug strap shows shoulder which can cause faulty picking. Separate packing shows what happens to leather when it is too soft or when rivet holding it to lug strap comes loose.

And after the section has been overhauled and built up to where necessary parts are replaced, it is merely a matter of similar part replacements when a break occurs.

WEAR ON LUG STRAPS. In time, wear develops on every lug strap; but many will last for five or more years. Generally, a hasty replacement wears quickly, and some looms may require many replacements in a section that is "rundown." To keep a loom's efficiency up as near standard as possible, when making a change on a power strap, for instance, check the lug strap at the same time.

Shown in Fig. 2 is a power strap used in almost all weaving plants. Some looms, such as Draper's modern rayon loom, have a power-strap holder below the lug strap; whereas other loom types have a holder above, or the power strap is secured to the picking stick with a heavy screw. Many of these power straps are formed in plies held together by steel rivets. As wear takes place, the leather eventually is worn away from the rivets, allowing the rivets to ride the lug strap edges, and within a short time to ruin the straps. If the rivets are too close to the leather edge they should be removed entirely.

Wear also gradually cuts through power straps; and at the time of a break, it is usually wise to check the lug strap packing for wear, as this may be the starting point of trouble. Here, wear on the hickory strap is usually due to soft leather which is inserted without pressure (see Fig. 4). A long steel rivet holds the packing in place, and a well-designed lug strap will have the packing plug pressed in under pressure. Also, the rivet, if used, should be centered and firmly placed.

On hickory and fiber straps, there is only the suppleness of this leather plug to take up the sudden shock of the pick, and this is the principle argument in favor of the hickory strap. The argument is hard to overcome on looms requiring every fraction of pick obtainable.

Certain drawbacks, however, should be considered when using the riveted-on packing. One, of course, is that on the unpressed or lightly pressed packing, the center becomes worn after a time and constitutes one reason for power-strap wear and breakage. Wear is not only unsightly but is a cause of bang-offs that is often overlooked.

On a bang-off, as the pick takes place, the power strap catches on the edge (Fig. 4) and starts the pick. However, there is little solid matter to

(*Continued on page 214*)

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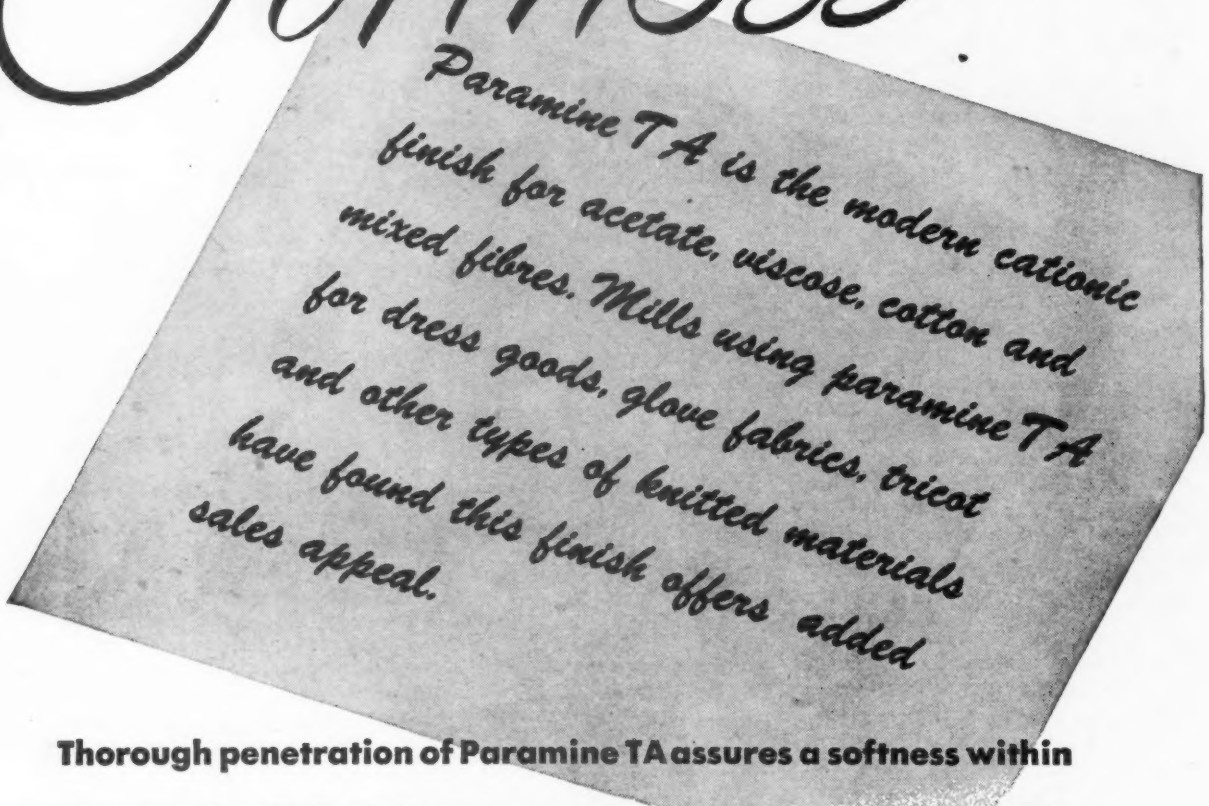
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HIGHLIGHTS: *Curved-web spinning rings have longer life than straight-web rings, Textile Operating Executives report — Metal bobbin base reduces wear of bobbin at spooler—Pneumatic roll picker saves 40% of hand - cleaning time — Grooved twister rings are preferred to plain rings.*

THE INFORMATION on spinning, winding, twisting, and warp preparation presented here was revealed at the spring meeting of the Textile Operating Executives of Georgia in Atlanta. Written and oral answers on these subjects are condensed for publication here. Data given during the panel on carding appear elsewhere in this issue.

Data on Non-Sloughing Cams for Spinning Frames

Mill No.	Ring dia. (in.)	Bobbin dia. (in.)	Bobbin length (in.)	Traverse length (in.)	Spooler throw-outs	Yarn No.	Spooler yd. per min.	Lays on bobbin (per in.)	Remarks
1	2 1/2	1 1/8	9 1/4	8	12	13	1,100	——	Best cam we have found to reduce sloughing.
3	2 1/8	15/16	9 1/4	5 3/4	1.5	20	1,200	Up, 42 Down, 14	Cannot use this cam successfully at this spooler speed.
7	——	——	——	——	——	——	——	——	Unsuccessful.
11	1 7/8	Bottom, 1 top, 3/4	9	4 1/2 to 8	8	24 and 31	1,250	64	Good results.
13	——	——	——	——	——	——	——	——	No advantage.
15	2 1/2	1 3/16	9 5/8	8 5/8	15	10	1,000	Up, 18 Down, 50	Better-running spinning and better doff weights.
	3	1 1/4	9 5/8	8 5/8	15	8	900	Up, 10 Down, 27	
	2 3/4	1 1/4	9 5/8	8 5/8	15	11	1,000	Up, 15 Down, 62	
	2 1/4	1	8 3/8	7 3/8	15	11.75	1,100	Up, 21 Down, 63	
18	2	7/8	8 7/8	5 1/4	——	7 to 18	1,200	——	Up to 25% more yarn on bobbins.
20	2	7/8	8	7	15 to 17	20, 25, 30	1,250	Up, 30 Down, 57	Same amount of yarn on bobbin; less waste; one-third fewer throwouts.
23	2 1/4	7/8	8 1/4	7 1/8	8	12	1,200	——	Spooler throwouts too high.
24	2 1/2	1	8 1/2	7 1/2	Very low	4	1,000	Up, 8 Down, 20	————
28	2	7/8	8 1/2	5 1/2	——	14.50 and 16	1,100	50	About 5% more yarn on bobbins.
29	1 7/8 and 2 1/8	7/8 and 1	9	7 1/2	17	30	1,000	35	————

CURVED–WEB SPINNING RINGS usually have a longer operating life than straight-web rings, according to information given by a number of mills at the Spring meeting of the Textile Operating Executives of Georgia. Of 14 mills that sent in written answers to this question, nine stated that curved-web rings last longer, three said that straight-web rings last longer, and two were of the opinion that there is no significant difference in the life of the two types of rings.

Traveler life, size of traveler, and ends down remain practically the same with both rings. Two mills reported longer traveler life, and five mills stated that fewer ends down occur with the curved-web ring.

Mill No. 3 wrote: "Traveler life is about the same on either straight- or curved-web rings. We break about ten times more travelers on curved-web rings when changing travelers." This mill also reported that, upon the recommendation of the ring manufacturer, it changed from a flange 2 to a flange 2½ ring to reduce traveler breakage.

Mill No. 25 wrote: "We have tried a few frames on curved-web rings and found them generally unsatisfactory for our work. We found them exceedingly difficult to break in, their life short, and generally more ends down than with straight-web rings."

At the Pelham Mill of Clark Thread Co., the curved-web rings have been found unsatisfactory for 80s to 100s yarn, it was reported from the floor. With these rings, the mill has more ends down, shorter traveler life, and more difficulty in breaking in new rings.

Curved-web rings have been running for five to six years in the Manchester Plant of Callaway Mills, O. C. Smith, superintendent, reported. These rings show no signs of wear and apparently will outlast straight-web rings. A larger-circle traveler of the same number as was used on the straight-web ring is used. No difference in ends down has been found.

METAL - BASE BOBBINS. The use of metal-base bobbins on clutch-type spindles generally increases the number of ends down as a result of faults during doffing and the number of high bobbins. Nine mills reported more ends down, two reported fewer, and two reported no difference. Six mills wrote that the use of this type of bobbin results in more high bobbins, four said that it results in fewer high bobbins, and two stated that they had observed no difference.

Mill No. 2 wrote: "Our experience has been that the metal-base bobbin cuts down the end on a clutch-type spindle during doffing. There is no difference in the number of high bobbins. The excessive end breakage on clutch spindles increased doffing time."

Mills Nos. 3 and 17 use thin fiber or

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NYLON CONING OIL 702

A COMPLETELY SAPONIFIABLE SYNTHETIC ESTER

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- **Promotes clear, uniform stitch**
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leather washers on the spindles to act as cushions between the spindles and the metal on the bobbins. These cushions were said to prevent the ends from being cut during doffing.

Mill No. 21 stated that it obtains better results with plain-base bobbins from the standpoint of end breakage, ease of doffing, and high bobbins. However, the metal-base bobbins yield advantages in reducing soft bobbins of yarn, worn bobbins not fitting the spindles, and the necessity for sorting out the bad bobbins.

Fairfax Mill, West Point Mfg. Co., is changing over to bobbins with metal bases and bushings, J. H. Hampton, overseer of spinning, reported. This change is being made because of the tendency of the spindles on the Barber-Colman spooler to wear out wooden-base bobbins. The advantage obtained in bobbin life will be somewhat offset by an increase in the number of ends cut down by the spinning doffers.

SLEEVE-TYPE SPINDLES. Six mills reported experience with sleeve-type spindles, and five of them stated that this spindle runs more smoothly than conventional spindles.

Advantages pointed out from the floor by J. S. Turner, Bibb Mfg. Co., Columbus, Ga., included less vibration —which results in increased life of spindle, ring, and traveler—and fewer cuts to the spinners' hands in stopping bobbins to get up ends. This last advantage is due primarily to the plastic top with which the bobbin used at Bibb is equipped. Some difficulty is experienced with yarn winding around the spindles at the bases of the bobbins and forming chokes.

Bobbins with metal shields around the tops are used at Swift Spinning Mills, Columbus, Ga., W. W. Purks reported. The mill has fewer soft bobbins of yarn with this type of spindle and bobbin. It is necessary, however, to keep chokes picked off the spindles to prevent high bobbins.

Wide use of pneumatic and other mechanical roll pickers was indicated in the written answers and the discussion at the meeting. Three significant advantages pointed out were: (1) rolls can be picked faster than by hand, (2) a better cleaning job can be done on the rolls, and (3) worker morale is improved because of the decreased injury to the cleaner's hands.

Mill No. 21 wrote: "We have effected a time saving of 40% over hand cleaning on the items we now clean with the pneumatic picker."

TWISTER RINGS. Grooved rings are preferred to plain rings by mills that

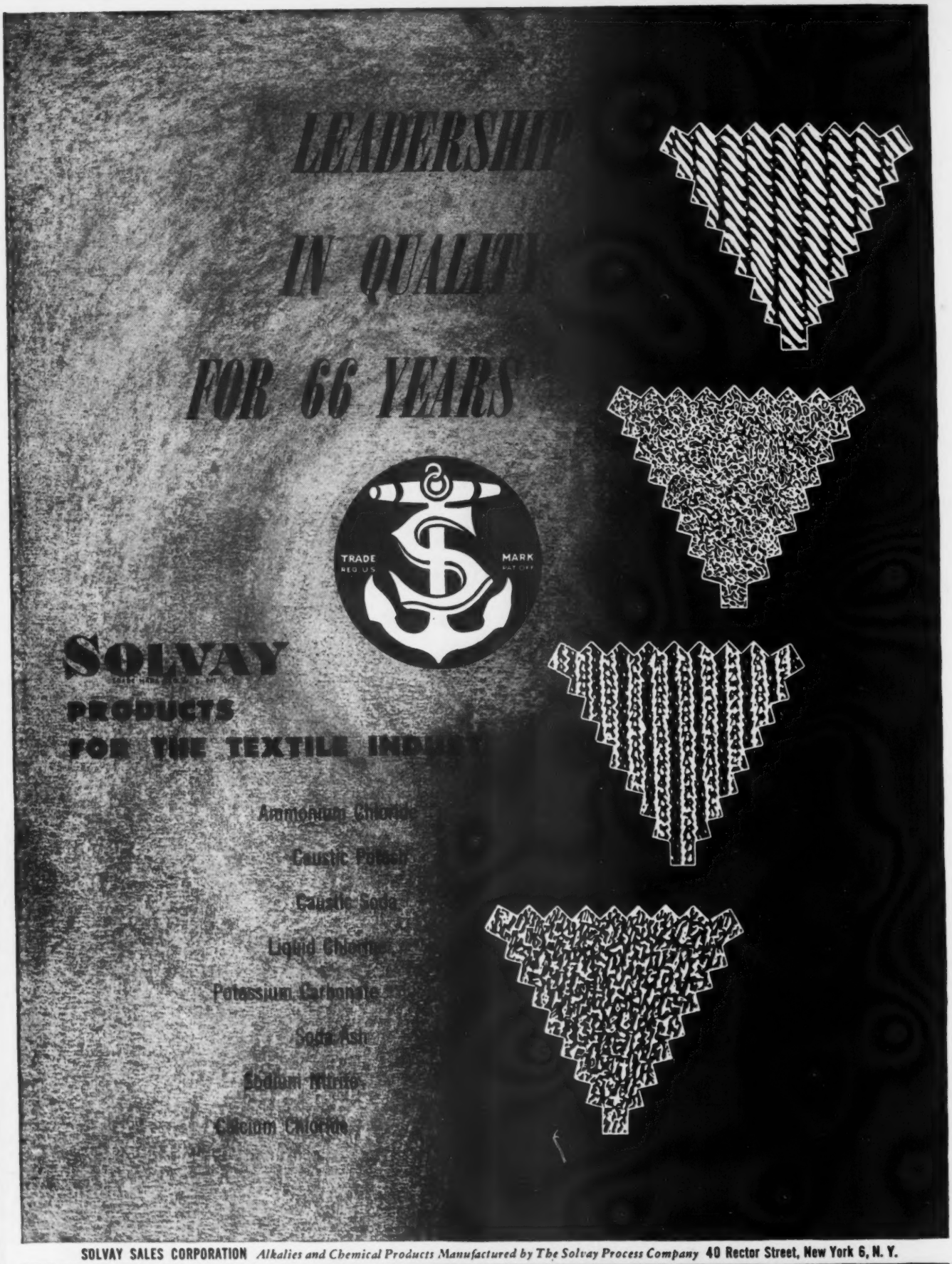
(*Continued on page 204*)

Length of Taper to Prevent Sloughing of Filling

Mill No.	Length of taper (in.)	Filling yarn no.	Traverse length (in.)	Ring dia. (in.)	Fast stroke of ring rail
1	2	10 to 14	7 1/2	1 9/16	Down
2	1 3/4	8 to 24	7	1 9/16	Up
3	Top, 2 1/4 Bottom, 1 5/8	3 to 8	7	1 1/2	Down
	Top, 1 3/4 Bottom, 1 1/2	25 to 28	6	1 7/16	Down
4	1 3/4	8 to 20	6	1 5/8	Down
5	1 3/4	6 to 20	6 1/4 and 7	1 3/4	Down
6	2	4	———	1 1/2	Down
	1 3/4	4 to 12.50	———	1 3/8	Down
8	2	8 to 16	7	1 3/4	Down
9	2 1/8	———	———	2 1/4	Down
10	2	13	7	1 7/16	Down
11	1 1/2	19 and 26	———	1 7/16	———
	1 3/4	10, 30, 40, 43, and 45	———	1 7/16 and 1 5/16	———
13	2	4 to 9	6 1/4	1 5/8	Down
	1 3/4	9 to 16	7	1 5/8	Down
14	1 3/4	42	7	1 3/8	Down
15	2 1/4	5.10	7	1 7/8	Down
	2 1/4	13	7	1 3/8	Down
16	2 1/2	12	9	2 1/2	Down
17	1 7/8	8 to 20	7	1 1/2	Down
18	1 3/4	2.50 to 13	7 1/4	1 5/8	Up
20	1 7/8	17 to 39	6 3/8 and 7 1/8	1 5/16 and 1 7/16	Down
21	1 1/2	9	———	1 3/8	Down
	1 7/8	22.50	———	1 1/2	Down
22	2 1/2	20	6 1/2	2 1/4	Down
23	1 3/4	36	7 1/4	1 5/8	———
24	1 7/8	7 to 18	7 1/2	1 5/8	Up
26	2 1/8	———	———	2 1/4	Down
	2 3/4	———	———	3	Down
27	1 7/8	25 and up	———	1 7/16	Up
	2	Up to 25	———	1 7/16	Up
28	1 3/4	10 and 11	———	1 3/8	Down

Checklist for Preventing Wild Yarn at Spoolers and Warpers

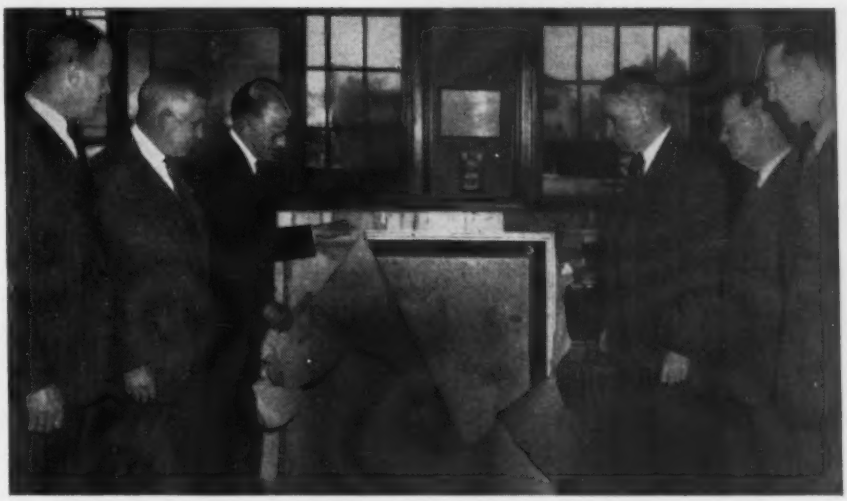
1. Set snick plates properly.
2. Pick loose yarn off plates and pockets.
3. Blow off spooler every 4 hr.
4. Blow off stored yarn before it is used.
5. Train tenders in the proper disposal of short pieces of yarn.
6. Have spinning doffers tie down yarn about 3/4 in. from bottom of bobbin.
7. Have spooler tender break off long tails on bobbin.
8. Keep the rotary brush on the traveler clean.
9. Keep wild-yarn shears in good shape.
10. Keep slack tube clean.
11. Discard or correct worn or rough spools and beams.
12. See that knotter ties properly.
13. Maintain correct settings on detector springs, pressure-lever springs, and rise rolls.
14. Require the operator to kink ends on cheeses when they are placed on the spooler.
15. Keep cheese arms lined properly and replace all crooked arms.
16. Have warper tender to check each creel for loose ends in drop wires.



SOLVAY SALES CORPORATION *Alkalies and Chemical Products Manufactured by The Solvay Process Company* **40 Rector Street, New York 6, N. Y.**

LOWELL TEXTILE Institute Celebrates Golden Anniversary

HIGHLIGHTS: *Increasing demand for intensive training to meet industry's broadening and deepening needs presages long-range expansion of educational and research facilities —Fine development program announced.*



The Charles H. Eames Portrait Committee is shown examining the portrait of President Emeritus Eames prior to its formal unveiling April 26 at Lowell Textile Institute. Left to right: J. Milton Washburn, Jr. '21; Harold V. Farnsworth '16; Chairman Edward A. Bigelow '06; President Emeritus Charles H. Eames; Arnold J. Midwood '05; and Institute President Kenneth R. Fox.

OUTSTANDING SERVICE to all branches of the industry for a half century by the Lowell Textile Institute was commemorated on Apr. 25 and 26 by a great gathering of alumni and distinguished visitors, who were given a closeup of the present status of this noted school and an outline of plans for its future development in the face of pressing industry and national needs. On Apr. 25, the program was focused upon a meeting at Hotel Statler, Boston, with registration, banquet, and entertainment. The principal address was made by Massachusetts Commissioner of Education John J. Desmond. Special greetings by the graduating class of 1900, the first to complete the curriculum, were also included. Open house at Lowell was held on Apr. 26, with many special exhibits at the Institute. The laying of the cornerstone of a new dormitory took place at 10 a.m. This is the first structure to be erected in the Institute's ambitious postwar program. At 11 a.m., President-Emeritus Charles H. Eames, who headed L.T.I. for nearly 40 years until his retirement in 1945, spoke on the early days of the Institute and the reasons for its inception. This part of the program was featured by the unveiling of an oil painting of former President Eames, which is to hang in Southwick Hall.

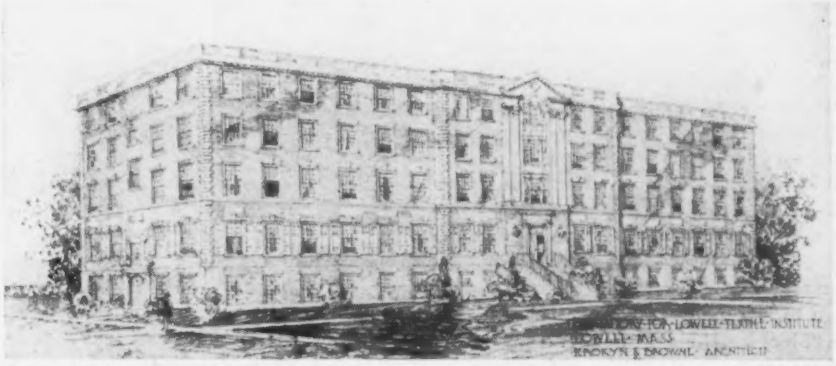
Following a business meeting of the alumni and a buffet luncheon, President Kenneth R. Fox delivered the main address of the afternoon on the Institute's outlook.

OUTLINES L. T. I. SERVICE. From an enrollment of 333 in 1941, the Institute's registration totaled 475 last September and is due to reach 550 in September, 1947, and about 600 in September, 1948. Applications for 1947 are closed. Many hundreds have had to be refused, including well-qualified would-be students. The Institute cannot at present find space for additional foreign students, and, other factors being equal, confines its admissions to Massachusetts residents since it is a state institution.

To meet the necessities of the case, a long-range building expansion plan has been developed in hope of later being able to accommodate 1,000 students. The first of four dormitories has been started in construction, each of which will cost approximately $400,000. It is hoped that an administration building and a science building will be built at an approximate cost of $1,500,000, and that a greatly needed recreation and library building will be provided for about $125,000. Extended development of athletics will also call for adequate and new facilities.

In 1946, the Massachusetts Legislature passed an act incorporating the Lowell Textile Institute Building Association to provide additional dormitory and other facilities for the school. The corporation has authority to hold real and personal estate not exceeding $500,000 for the above purposes, and to lease land in Lowell owned by the state from the trustees of the Institute. This association is allowed to borrow money and issue bonds for the above uses. Buildings so

(*Continued on page 210*)



Architect's drawing of dormitory to be erected. Four are to be built.

The Hidden Bearings that Gave the Foreman a "Hot-Foot!"

RICHMOND Hosiery Mills, Rossville, Ga., one of the country's largest manufacturers of hosiery and hosiery yarns, was having bearing trouble. Machine shutdowns were costing money and needed production.

After considerable study, management discovered the cause—inexperienced members of the lubrication crew. Hidden or inaccessible bearings were being overlooked. Some bearings got too much lubricant, or too little, or the wrong kind.

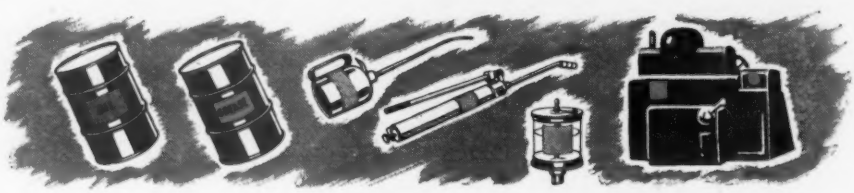
Alemite Lubrication Specialists were invited to make a complete analysis of the Richmond plant, and the Alemite Coloroute Plan of Lubrication was recommended and installed. All lubrication points—fittings, gears and oil holes—were plainly marked with identifying color symbols that told the oilers where to lubricate, when to lubricate, and what lubricant to use. "Since installing the Coloroute System 3 years ago," says the Richmond management, "motor failures from burned out bearings have almost ceased in our plant."

COLOROUTE IS FOOLPROOF!

Each lubricant container and gun is "color-identified" to correspond with color symbols on the machines. The plan is so simple, so easy to explain, that even inexperienced help can easily follow it.

To Executives: Have an Alemite Lubrication Specialist explain the "Coloroute Plan of Lubrication."

He has case histories to show how the number of lubricants required to do the job can be reduced by 30% to 75%. The economies and benefits of Coloroute are applicable to any size plant, large or small. Complete information without obligation. Just write Alemite, 1888 Diversey Parkway, Chicago 14, Illinois.



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ALEMITE

Alemite ALONE Combines all 3 in Lubrication

1. EQUIPMENT 2. PROCEDURES 3. LUBRICANTS

TEXTILE Equipment NEWS

New Winder Requires No Yarn Tension

A system of winding which utilizes a new type of yarn package has been announced by Muschamp Taylor, Ltd., Pollard St., Manchester, England. Called Noco, the new winder is designed to produce an overend supply package at high speed and to overcome some of the difficulties experienced with cones. The Noco package consists of a bobbin with a short tubular barrel from which extend conical heads. Yarn wound on the bobbin cannot slough off, it is stated, even if wound with no tension. Capacity of the new bobbin is 2 to 3 lb. of rayon yarn; its dimensions are 6x6 in.

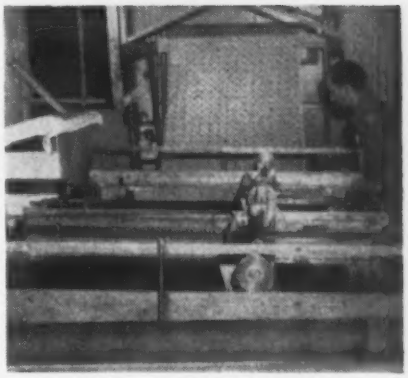
Designed primarily for rayon yarns but reported to be equally applicable to other fibers, the Noco winder is said to run at winding speeds up to 800 yd. per min. In addition to the high speed attained, other advantages claimed for the winder are: low tension eliminates stretched yarn; slow traverse permits closer winding, reduces size of balloon when unwinding, obviates the rolling action to yarn caused by quick traverse, and reduces broken filaments; it is impossible for yarn to catch under package when unwinding; yarn does not slough from bobbin.

In winding onto a Noco bobbin, the yarn is guided by an oscillating thread guide which uses the diameter of the built-up package to effect a smooth build against the conical heads of the bobbin. The yarn is drawn in a straight line from the supply package on the Noco winder, passes through a simple tension device, through a slub catcher if desired, and then is guided onto the bobbin by the Noco thread guide. The traverse motion is very slow, giving practically a parallel wind. There is no need to apply stop motions to Noco winders, it is said, due to the fact that no damage occurs to the top layer of yarn if the spindle continues to run.

The Noco bobbin can be used in magazine creels, on any type of filling winder, or in any other place where yarn is to be drawn off overend, it is said. The bobbin is not recommended for shipment.

An advantage claimed for Noco bobbins in warping and beaming operations is that partly exhausted bobbins need not be back wound, but can be put back on the winder and refilled.

Arrangements may be made to build the machine in the United States.



Screen-printing machine is designed to produce, by mass-production methods, results identical to those achieved by hand processes. (Photomatic)

Screen-Printing Machine Prints 2 to 15 Colors

A screen-printing machine said to produce results identical to those achieved by hand processes and to be capable of printing any type of fabric has been announced by Screens By Photomatic Service Corp., 128 Water St., New York. Called Electro-Screenprinter, the new machine is designed to print from 2- to 15-color patterns at a single printing. Due to low production cost, increased efficiency, and quality of product, the new method is expected to find extensive application in the printing of many fabrics such as linens, dress goods, scarfs, table cloths, napkins, handkerchiefs, wallpaper, oilcloth, and others.

The most important feature of the new machine, according to the inventor, is the saving in labor, time, and spoilage caused by errors and fatigue. Using the new process, losses of material are said to be negligible.

In the Electro-Screenprinter the

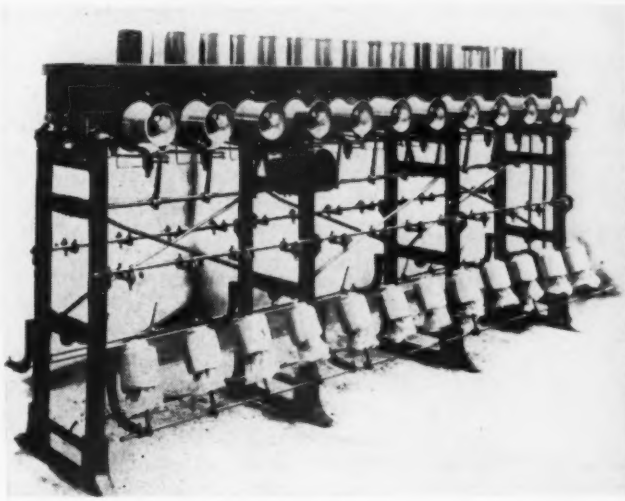


FIG. 1

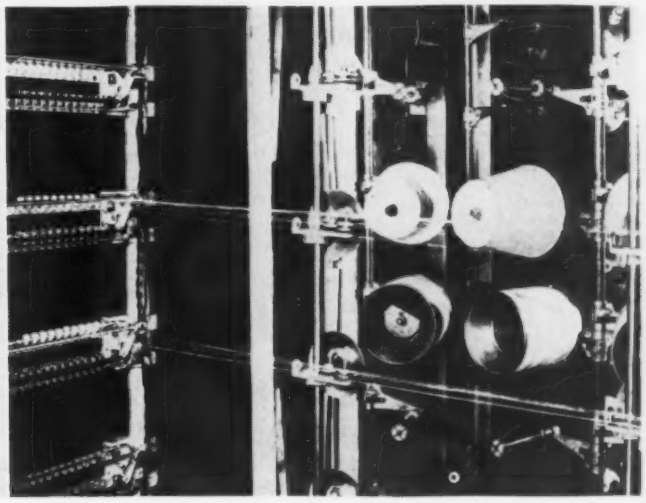


FIG. 2

Fig. 1. Noco winder produces parallel-wind package with very low tension from which yarn does not slough. Fig. 2. Noco bobbins can be used in magazine creels and other places where yarn is drawn over-end. (Muschamp Taylor)

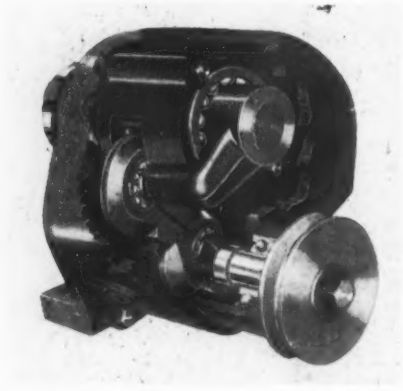
fabric is transported to a movable conveyor on which all colors are printed. Perfect fit and joining of color patterns is said to be achieved. Joining can be adapted to any size pattern from 15 to 75 in. with an allowance and registration of fit of only 0.001 in. Provision is made for carrying material through a range of machines following printing; a steamer, washer, and dryer can be coupled to the printer to form a printing range.

Ball-Bearing Comb Box Lubricated for 2 Yr.

A new ball-bearing comb box for cotton cards has been developed by the Henderson Foundry Div., Southern States Equipment Corp., Hampton, Ga.

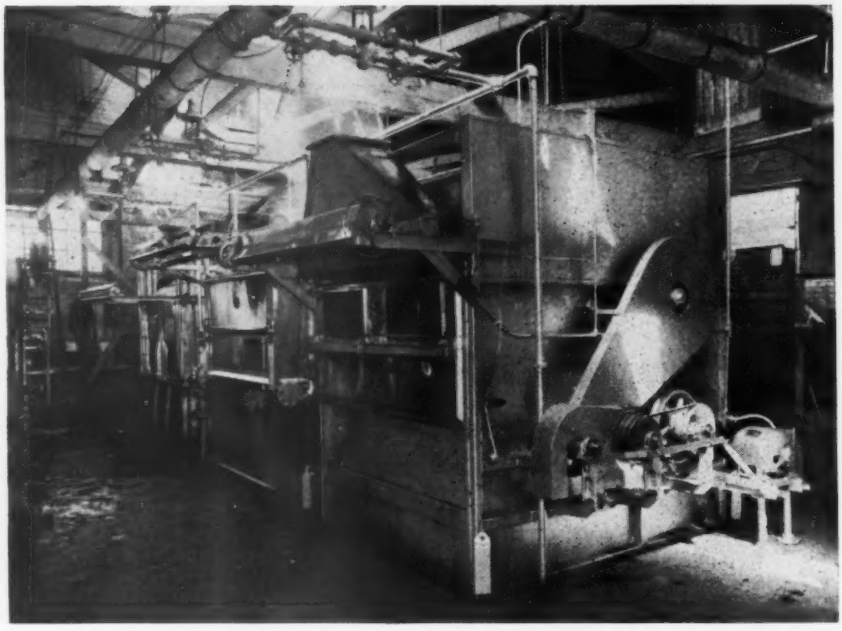
The type C ball-bearing comb box is designed to fit either left or right hand on any current make of carding machine. Comb-stock adjustment or replacement is reported to be easily accomplished from the exterior of the box, and there are no plates or cover to remove.

Of heavy-duty, double-row ball-bearing construction throughout, the new comb box reputedly eliminates such problems as friction, heat, chatter, and wear. There are no slapping parts to wear out, a factor which is designed to reduce replacement costs to a minimum. Wear is confined to the bearings, which are standard and made by five of the leading ball-bearing manufacturers.



Ball-bearing comb box is designed to fit either right or left hand on any current make of cotton card. (Southern States Eqpt.)

The comb box is factory lubricated and sealed by a process which tests have shown will hold up approximately 2 yr., it is said. This improvement is reported to eliminate oil leakage on the card, damage to doffer clothing, and the practice of constant oil changing and greasing.



New pile-fabric dye kettle is non-fogging and is designed to draw vapors away from operator when door opens. (Riggs & Lombard)

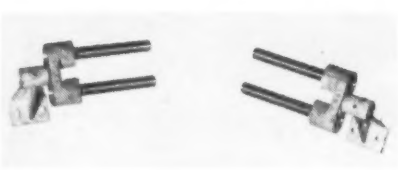
Pile-Fabric Dye Kettle Saves Steam and Dyestuff

A new pile-fabric dye kettle embodying a number of improved features has been announced by Riggs & Lombard, Inc., Foot of Suffolk St., Lowell, Mass.

The ventilating duct of the kettle is at the top front of the machine, and the door slides down; thus, vapor is drawn up and away from the operator when the door is opened. The totally inclosed, insulated top is reported to keep the bath at the boiling point, since the surface of the liquor is exposed to steam rather than air. There is said to be no fog during the dyeing operation, the operation being clearly visible through the front windows with the help of an electric light inside. Savings in steam of 25 to 30% and savings in dyestuffs of 5 to 10% are reported to be effected by the machine.

Other reported features and advantages of the machine include easy threading due to extra space in hood, heating system which permits change in rate of bath circulation, washing method preventing dead spaces and short circuiting of rinse water, reduction of rinsing time, elimination of wrinkles and shading, positive variable-speed V-belt drive, tub made of $\frac{3}{16}$-in. stainless-steel plates.

Ball-Bearing Selvage Openers Are Adjustable



Selvage openers, for use on processing machinery, run in ball bearings, are adjustable to cloth, and are made of nonferrous castings. (Cook Machine Co., Waltham, Mass.)

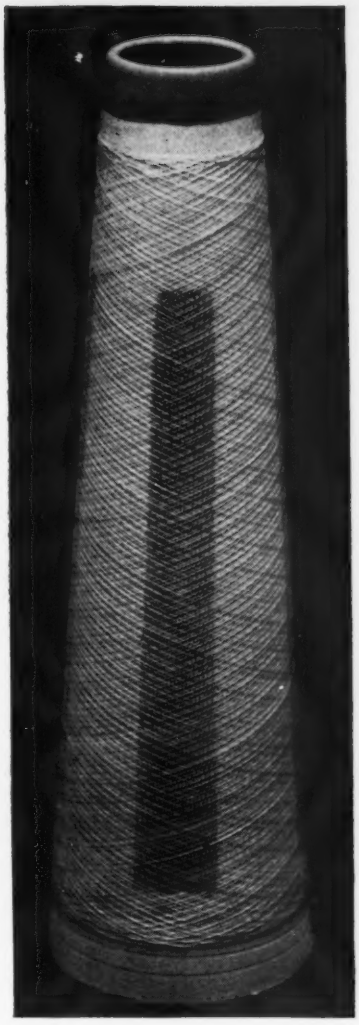
New Horizontal Padder Is Six Machines in One

A new 3-roll horizontal padder which is actually six machines under one streamlined cover has been announced by H. W. Butterworth & Sons Co., York & Cedar Sts., Philadelphia 25. With minor variations in boxes, the horizontal padder becomes an extracting mangle, a caustic impregnator, a universal padder, or a starch mangle; or with a change of rolls, the machine becomes a 15-ton rayon calender, it is reported. Rolls of any diameter can be used without new parts or major revisions.

At present, changes in formula or process often require completely new machines. This means the loss of time and production, and the increased expense of replacing old machines. These new machines are designed for easy conversion to do several jobs. Machines can be changed over quickly and easily, whenever required by ad-

Two different cones with but a single thought–

To Save Waste



LEFT—The "Visible Runout," a development by SONOCO for knitting yarn cones to warn the machine operator by sight the time to change the cone with minimum press-off waste.

RIGHT—The "Velvet Band," a SONOCO development for transfer cones used in magazine creeling that prevents breakage and permits delivery of yarn to the last turn– eliminating waste of time & production.

Thus, two entirely different cones made for entirely different uses, permit waste savings for entirely different reasons . . . Examples of technical development work going on constantly at SONOCO which means savings to the textile industry.

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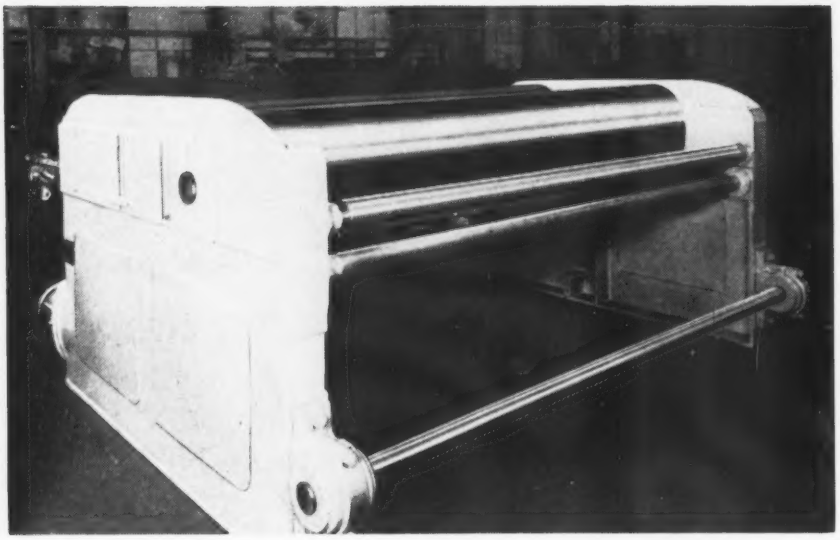
DEPENDABLE SOURCE OF SUPPLY



New 3-roll horizontal padder can be quickly changed over to any one of five other machines; for versatility, all controls are within easy reach of operator. (Butterworth)

vances in textile chemistry it is stated.

Streamlined covers, of stainless steel where necessary, protect all working parts and act as safeguards against accidents. These covers are also designed to prevent the splashing and leaking of liquor.

Because the new machines are expected to be versatile enough to run cotton, wool, and rayon as well as new fabrics, all controls are built into the machines within easy reach of the operator. New meters and indicators are designed to afford positive and close control.

Warper Beam Travels To Slasher on Carriage

A new system of warping designed primarily for rayon yarns has been announced by Muschamp Taylor, Ltd., Pollard St., Manchester 4, England. Utilizing an adaptation of the horizontal-warping system, the new warper is said to combine the desirable feature of high productivity (800 yd. per min.) with high quality.

The new unit, known as model V-3, consists of a precision-built head stock, a number of carriages with steel warping drums, a creel, a permanently fixed reed-holder stand, and a permanently fixed traversing headstock for the slasher.

When warping, a carriage is connected to the headstock, both carriage and headstock being mounted on rails. A rack gear mounted in the floor, on which works a pinion driven from the headstock, is used for displacing the unit during the winding of a warp. Displacement of the unit is automatic and is controlled by change gears in the headstock. When the drum is full, it is said to require but 30 sec. to disconnect it from the headstock, push it off the rails, and to couple on an empty drum ready to wind another warp. The full drum is moved on its carriage to the slasher where it is pushed onto a pair of rails and coupled to a small traversing headstock. The headstock automatically displaces the drum along the rails as the warp unwinds.

The warping drum is totally inclosed and is made of steel; it has a diameter of 31½ in. The angle of the cone is fixed at 17° to the horizontal. It is said to be possible to wind sections up to 12 in. in thickness.

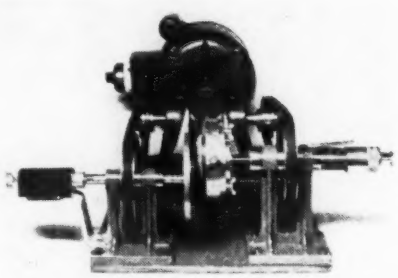
The new warper is designed for use with any existing type of sizing machine. It is fitted with an automatic stop motion designed to operate not only when ends break but also at predetermined yardages for inserting leases. Leases are inserted in the normal way. A signal light indicates when the machine has stopped for leasing.

Abrader Produces Uniform Results

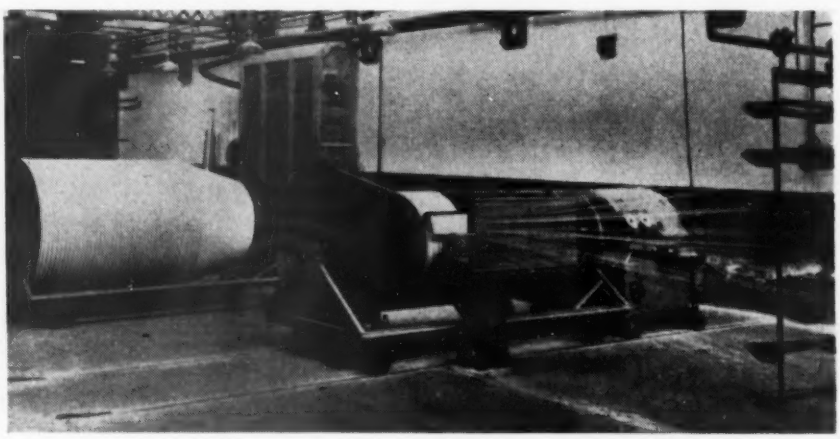
A new abrader developed by the National Bureau of Standards, Washington 25, D. C., is designed to abrade a plane area of specimen uniformly over the entire surface and from every direction in its plane. The machine is the result of a mathematical solution to the problem of uniform abrasion worked out by Herbert F. Shiefer; it is reported to effect abrasion which is constant in magnitude over the whole abraded area but the direction of which is continuously changing through 360°.

The working part of the abrader is composed of two rotating disks, one holding the abradant and the other

(*Continued on page 231*)



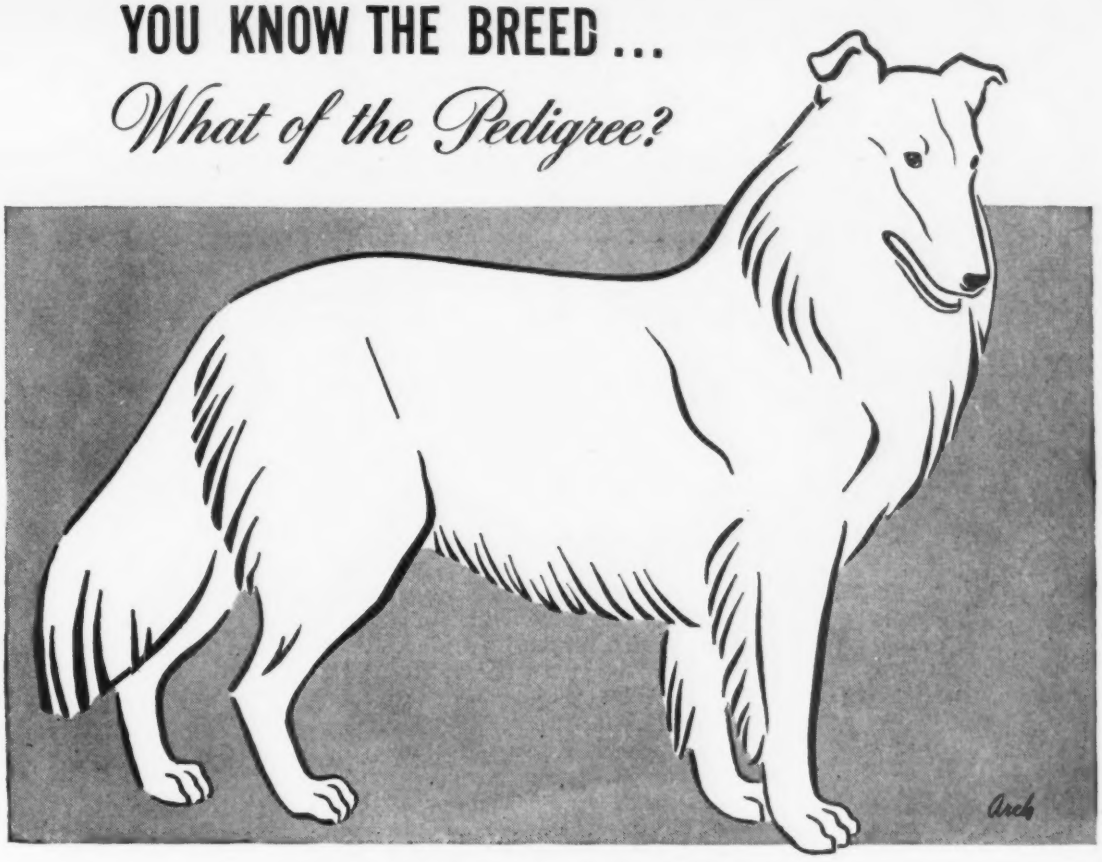
Abrader, designed to produce uniform abrasion from every angle over whole area of abradant specimen, utilizes clock spring as abradant; and specimen disks rotate in same direction and with same angular velocity; but are not coaxial. (Nat. Bur. Stds.)



Carriage-mounted high-speed warper drum couples to traversing headstock when winding warp at speeds up to 800 yd. per min. Full drum can be uncoupled and rolled to slasher where small traversing headstock keeps warp aligned with slasher during unwinding of warp. (Muschamp Taylor)

YOU KNOW THE BREED ...

What of the Pedigree?



One of the most dependable of sheep dogs, the Collie is intelligent, easily trained, and makes an exceptionally loyal companion.

You can tell at a glance it's a Collie . . . but is it pedigreed? Only the expert can tell.

Your product, no doubt, can be identified in a generic sense. But, what of its specific selling quality . . . its pedigree? Kaumagraph identification offers you the quickest, easiest, most economical means of enabling your customer to be his own expert judge of that quality.

The quick application of heat on a Kaumagraph* Dry Transfer or Prestomark is all it takes to reproduce your name, trade-mark or lettering distinctively and legibly on any textile, leather, rubber or synthetic material. Give your product safe, sure, seen-at-a-glance Kaumagraph Identification now—protective marking you need especially today in view of pending new trade-mark legislation. Send for a Kaumagraph Man today.

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REPRESENTATIVES IN PRINCIPAL TEXTILE CENTERS OF THE WORLD

Dry Transfers Prestomark Labels Embossed Seals Transfer Irons Stamping Inks
Lithography for Box Wraps, Labels, Displays, Booklets, and Folders

Kinks AND SHORT-CUTS

★ **SAVINGS BOND PRIZE FOR MAY**
(March Contest)

A $25 SAVINGS BOND FOR YOUR IDEA

A $25 Savings Bond will be awarded each month for the most useful "kink" published in this department. This contest is open to all readers of TEXTILE WORLD, and there is no limit to the number of entries any one person may make.

Contribution must be received not later than the last day of the month to be eligible for the award for the second succeeding month. Items may pertain to production methods, mill engineering, safety, cutting costs, improving quality, speeding up production, in brief any little device, stunt, kink, or short-cut which you have tried out in your own mill which you believe will be helpful to other mill men. Items should contain sufficient detail to permit other mill men to utilize the ideas in their own operation. Previously published material is not eligible for the award. Judges of the contest are the editors of TEXTILE WORLD.

TEXTILE WORLD shall have the right to publish any item submitted. Items which are accepted will be paid for at our regular rate for this type of matter with extra payment for appropriate sketches or photographs. The sketch you submit need not be a finished drawing.

In writing to this department, give your real name and address as evidence of good faith and to permit payment for items accepted. Please advise whether your name may be used with the kink.

Contributions should be addressed to: Technical Editor, TEXTILE WORLD, 330 West 42nd St., New York 18, N. Y.

Idler Cone on Picker Provided With Adjustment

We have had considerable trouble with bearing and cone-belt failures on our Kitson pickers by not having a positive way to align the idler cone and keep the proper tension on the belt. The standard endless cone belt is 1 in. wide and 91 in. long. When a belt runs for some time, it stretches so much that it becomes inefficient in regulating the picker feed; and it must be replaced.

I devised a means for adjusting the idler cone so that proper tension can be maintained on the belt throughout its life, and correct alignment of the cone can be made to protect the bearings. The method for doing this job consists in making and installing a brace, containing an adjusting slot, at each end of the idler cone and installing self-aligning ball bearings.

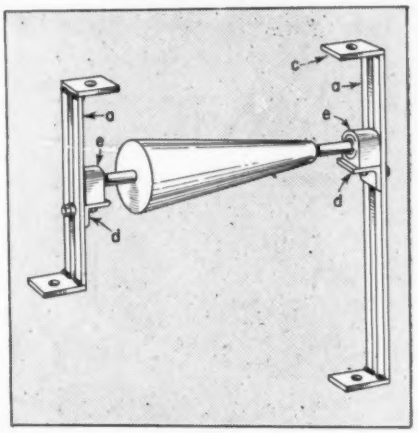
To make the braces, secure four pieces of ½-in. key steel, two pieces of which should be 26¼ in. long, shown at *a* in the accompanying sketch. The other two pieces, *b*, should be 15¼ in. long. Also secure four pieces of flat steel, *c*, 1½ in. wide, 3½ in. long, and 5/16 in. thick.

Place the two 26¼-in. pieces of key steel, *a*, in a position parallel to each other, and at each end weld one piece of the flat steel. Repeat this procedure with the 15¼-in. lengths of key steel, *b*. These two assembled pieces comprise the frames of the braces, and each frame has a ½-in. adjustment slot extending over its entire length.

Now secure two pieces of 2-in. angle iron, *d*, of sufficient length to support self-aligning bearings *e*. Drill holes in each side of these angle irons. The hole in one side is used for bolting *d* to the brace, and the hole in the other side is used for securing *d* to the bearing.

In the centers of each end piece *c*, drill a ½-in. hole. These holes are used in fastening the braces to the machine.

To install the braces, remove the present brace at the large end of the idler cone and put brace *b* in its place. Fasten the ends of this brace in the same places that the present brace is bolted. Now remove the long brace at the small end of the idler cone and bolt brace *a* in its place.



Bearing and cone-belt life can be prolonged on a Kitson picker by installing self-aligning ball bearings and adjustable braces that permit accurate adjustment of belt tension. Braces a and b are made of double lengths of ½-in. key steel and provide ample adjustment for lowering the idler cone.

Remove the cone from the old braces, install the self-aligning ball bearings on the cone shaft, and bolt the bottoms of the bearings to angle irons *d*. Accurately measure and level the idler cone so that the desired tension is placed on the cone belt. Fasten angle irons *d* to braces *a* and *b*.

When the belt becomes slack as a result of stretching, the tension can be readjusted by slightly lowering the cone. This adjustment can be quickly made by loosening the bolts at *d* and lowering the assembly in the adjusting slots in *a* and *b*. (K-606) *J. G. Long, Sylacauga, Ala.*

Backing-Up Flanges Aid in Building Up Rings

It is sometimes necessary to build up the inside of a ring, bearing, etc. with bronze; and a special method of handling the job may need to be devised. One such job required that the insides of a large number of steel rings

Spunjel
FOR WARP SIZING SPUN RAYON

Photo courtesy of:
A. D. JULLIARD & CO., INC

for solid blending

SPUNJEL maintains the original fiber blend balance in the yarn. Its high adhesiveness and strong, flexible film securely anchors all surface fibers—and effectively reduces shedding on the slashers and looms. It assures a woven fabric that closely approximates the pleasing appearance and hand of expensive worsteds.

SPUNJEL is a specially prepared warp sizing for spun rayon blends containing cotton, wool, acetate and other natural and synthetic fibers. Its high adhesiveness produces results similar to gelatin and makes it particularly suitable for single or plied yarns of acetate or protein fibers.

SPUNJEL—which is readily desized by all standard procedures—permits the woven fabric to fluff out better because it has been woven tightly without loss of bulk through shedding.

National also produces: **NALEX** for cotton and worsted warp sizing; **AMBERTEX** a heavy-bodied thickener for white discharge, direct and vat color printing; **FIBERTEX** for textile finishing; **FLOTEX** to replace natural gums for printing; **FLOJEL** uniform, thin boiling corn starches in all standard fluidities; **HOOSIER** Pearl Cornstarch.

Offices: 270 Madison Avenue, New York 16; Boston, Philadelphia, Atlanta, New Orleans, Indianapolis, Chicago, San Francisco and other principal cities. In Canada: Meredith, Simmons & Co., Ltd., Toronto and Montreal. In Holland: Nationale Zetmeelindustrie, N. V., Veendam.

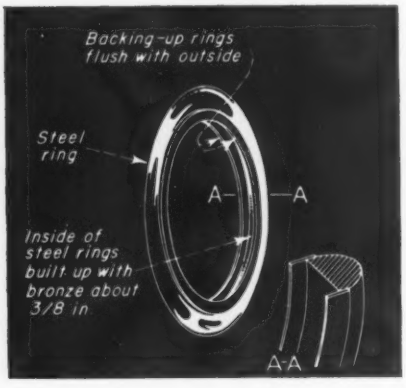
National
STARCH PRODUCTS

STARCHES—AND *SPECIALTIES WITH EASILY DEMONSTRATED SUPERIORITY*

with an average diameter of 12-in. and a width of 3 to 4 in. be built up about $\frac{3}{8}$-in.

In order to ensure that the bronze would be flush with the edges of the ring, backing-up flanges were welded on both edges of the ring. These flanges, about $\frac{1}{8}$-in. wide and $\frac{3}{8}$-in. thick, served as side walls for holding the melted bronze. (The outside diameter of the backing-up ring was the same as the outside diameter of the steel ring, but the inside diameter was 6/8 in. smaller.)

When the bronze was deposited in the recess, the two backing-up rings were machined off, leaving the steel ring built up to the required $\frac{3}{8}$-in. with the bronze flush with the edges. *(K-649) The Linde Air Products Co., New York, N. Y.*



To aid in building up the inside of a steel ring with a $\frac{3}{8}$-in. deposit of bronze, a backing-up flange was welded to the edges of the ring. When the bronze was deposited, the flanges were machined off. The bronze deposit was of the proper thickness and was flush with the edges of the ring.

Cork Friction Strip Replaced With Emery

A considerable amount of production was lost on our 80-spindle Abbott automatic quilling machine as a result of "dead" spindles, particularly when we were quilling heavy yarn, such as 3-run woolen yarn.

A study of the cause of these dead spindles revealed that the cork friction strip on the bobbin plow caused the yarn to be hooked on the feeler. The cork plate would not permit the bobbin to roll; and as a result, the loose end of yarn was wound on the bobbin.

This trouble was eliminated by removing the cork friction strip on the bobbin plow and replacing it with a strip of emery cloth. Approximately 90% of the dead spindles we formerly had are now maintained in production. *(K-636)*

Runs in Nylon Hose Prevented by Cardboard

The tube on an S&W hosiery machine has several openings that may have rough edges that will pick the fabric being knitted and cause a run, particularly if nylon is being used. Also the screwheads may have rough places that may cause runs.

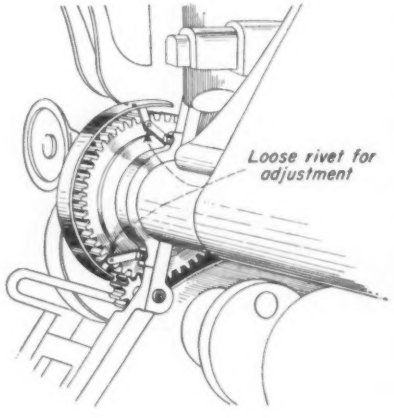
An effective way to prevent damage to the hose from these rough places is to roll up a piece of pliable cardboard and insert it in the bottom of the tube. The cardboard should extend the full length of the tube and protrude an inch or two below the bottom.

In this manner, the fabric is prevented from coming in contact with the rough places on the tube. This method saves a lot of time and work that would be necessary to smooth and polish these spots. The cardboard can be quickly removed in order to make repairs or adjustments to the machine. *(K-628) E. H. Paige, Franklin, N. H.*

Guard on Take-Up Roll Keeps Weaver Clean

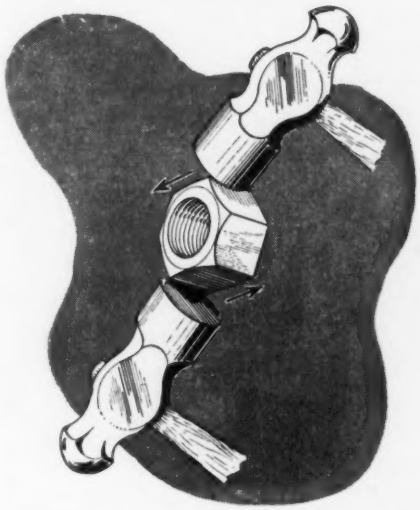
The cloth take-up rolls on some of the new woolen and worsted looms have a large gear that is in such a position that weavers have considerable trouble in keeping their clothing from coming in contact with the teeth on the gear. This gear must be lubricated, and the teeth are therfore covered with dirty grease or oil.

A guard, shown in the accompanying sketch, may be easily constructed to eliminate this trouble. Use $\frac{1}{8}$-in. flat iron about $2\frac{1}{2}$-in. wide for the guard and $\frac{3}{4}$x$\frac{1}{8}$-in. angle iron for the brackets. Have the rivets connecting the angle brackets loose so that the brackets are adjustable. The guard is fastened to the two capscrews on the take-up roll holder. *(K-656)*



A guard placed over the gear on the loom take-up roll will prevent the weaver's clothing from getting caught in the gears.

The Use of Two Hammers Aids in Loosening Nuts



A large nut that is seldom turned will sometimes freeze on its stud so that it is difficult to remove the nut by the usual methods. In such cases, the method shown in the illustration will be found helpful. Use two hammers and sharply strike opposite corners of the nut. The first blows will usually break the nut free. (K-658)

Conditioning Time Indicated by Color

In many mills which use a steam room for conditioning mercerized or colored yarn, either in boxes or on racks, non-uniform conditioning results from the fact that the yarn is taken out of the steam room too soon or is allowed to remain too long. The reason for this condition, of course, is that the operator who removes the yarn from the room is careless or that an easier means for knowing how long the yarn has been in the room is needed.

The method we use for readily knowing when a particular batch of yarn is ready to be removed from the conditioning room is to place a paper

ARNOLD, HOFFMAN PUTS NEW CHARLOTTE PLANT IN OPERATION

To Better Serve the Textile Industry

THE NEW PLANT of Arnold, Hoffman & Co., Inc., in Charlotte, North Carolina, is now in operation.

The need of Southern manufacturing facilities has long been apparent. Plans were made and the plant designed years ago. During the war, when building such as this was impossible, these plans were perfected and as much work as was practicable was done. In 1943 the plant site and a building which served as a nucleus of construction were acquired. In 1945 contracts were awarded for the necessary work of addition.

For better service to the textile industry (and the South in particular) many AHCO products will in the future be made in this plant.

Partial List of AHCO PRODUCTS

Ahco 1250	A Vinyl Resin Finish for Nylon Hosiery.
Ahcobase* Oils	Concentrated Emulsifiers for Mineral Oils.
Ahcobond* S	A Water Soluble Resin Binder.
Ahco* Dry Rayon Size	A Highly Concentrated and Completely Balanced Size for Rayon Warps.
Ahcofix* A	A New Synthetic Fixation Agent for Dyestuffs.
Ahcoflex*	New Penetrating Softener
Ahcols*	Sulphonated Castor Oils.
Ahcopan* Wax	Highly Dispersed Wax for Warp Sizing.
Ahco* Resin Finishes	Resin Emulsions, Starch Extenders and Binders.
Ahcospun* Warp Sizes	A Dry Size for Spun Rayon Yarns.
Ahcovels*	Substantive Softeners.
Ahcovon T	A New Textile Detergent Derived from Petroleum.
Ahcowet* ANS	A Synthetic Surface-Active Compound.
Ahcowet* RS	A New Synthetic Surface-Active Compound.
Clarinols*	Emulsifiable Oils for Combing and Spinning.
Concental*	A Versatile, Highly Concentrated Softener for Cotton and Rayon.
Gelatine Gum	A Corn Base Finishing Gum That Imparts Body Without Harshness.
Mellol* 100-B	A Stable, Efficient Softening Oil.
Rapidogen Gum XX	A Printing Thickener for Cotton and Spun Rayon.
Resynon* SL	A New Synthetic Durable Resin Finish.
RPG* Gum	A Versatile Thickener for Rapidogen, Indigosol and Vat Colors.
RW Finish	An Excellent Finish and Weighter.
Syntharols*	Highly Concentrated and Completely Balanced Sizes for Cotton Warps.
Synthrapol* AS	A Low Cost, Chemically Balanced Detergent and Scouring Agent.

**Reg. U. S. Pat. Off.*

ARNOLD, HOFFMAN & CO., INC.

MANUFACTURING CHEMISTS

ESTABLISHED 1815 • PLANTS AT DIGHTON, MASS. AND CHARLOTTE, N. C.

PROVIDENCE, RHODE ISLAND

NEW YORK • • BOSTON • • PHILADELPHIA • • CHARLOTTE

KINKS & SHORT-CUTS

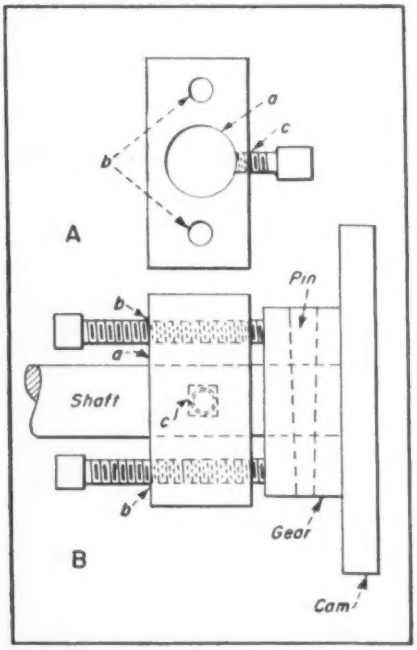
(Continued from page 168)

cover of a certain color on each rack of yarn when it is taken to the conditioning room. The color of paper indicates that the yarn is to be removed after a certain number of hours, such as eight, 16, 24, etc. *(K-468) C. H. Anderson, Chattanooga, Tenn.*

Tapered-Pin Assembly Held in Place by Setscrews

The usual method of replacing a broken tapered pin in a Crompton & Knowles box motion is to remove the entire box motion, make the repair, and replace the box motion. Time in replacing a broken pin can be saved by using the device shown in the accompanying sketch for lining up the hole in the gear with the hole in the shaft.

The device is made from a piece of steel 2¼ in. long, 1⅛ in. wide, and 1⅛ in. thick. In the center of one of the 2¼x1⅛ faces of this piece of steel drill a hole 23/32 in. in diameter, shown as a in sketch A. Between the edges of this hole and the ends of the piece of steel drill and thread holes *b* for receiving 5/16-in. setscrews 2¼ in. long. In the center of one side of the piece of steel drill and thread 5/16-in. hole c perpendicular to hole a, and insert a setscrew ¾ in. long.

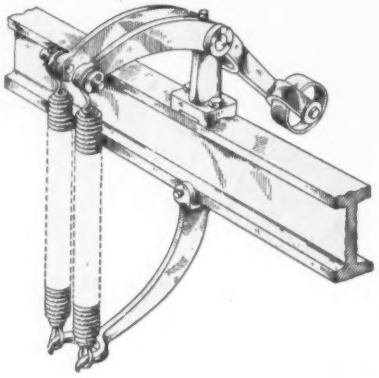


This lining and holding device, made from an old piece of shaft, is useful in replacing a broken pin in a Crompton & Knowles box motion. Setscrew in hole c holds the device securely to the box-motion shaft while set screws in holes b are used to apply pressure against the box-motion butterfly gear. The holes in the gear and shaft can be lined up in this manner to ease the job of replacing the tapered pin.

To use the lining device, place hole *a* over the box-motion shaft, as shown in sketch *B*. Fasten the device securely to the shaft by tightening the setscrew in hole c. Run the setscrews in holes *b* against the box-motion butterfly gear, and increase balanced pressure on the setscrews until the pin holes in the gear and shaft are in line. A broken pin can then be removed easily or a new one inserted.

When the new pin has been properly placed, loosen the three setscrews and remove the device from the shaft. *(K-615) Elmon Thomas, New Holland, Pa.*

Roll on Balancing Arm Lengthens Life of Parts



Wear on the ends of the balancing arms and on the ends of the balancing-arm springs of a full-fashioned knitting machine can be avoided by installing roll connections.

On the Reading full-fashioned knitting machine, some trouble is encountered by wear of the top hooks supporting the springs which maintain tension on the roll working against the face of the balancing cam. Wear also occurs to the end loop of the springs.

A method of preventing this wear is illustrated in the accompanying sketch.

Build up the hooks at the ends of the balancing arms by welding so that they form solid bosses at least ¾ in. in vertical diameter. Tap horizontal holes through these bosses and thread them for ⅜-in. studs. Make the studs, and screw them into the bosses, allowing about ½ in. of the studs to extend from the bosses. Near the ends of the stud extensions, drill holes for cotter pins.

Now make rolls, one for each stud, of sufficient thickness to fit on the studs between the bosses and the cotter-pin holes; and drill out the centers of these rolls so that they will slip loosely over the studs. Cut grooves around the outsides of the rolls for receiving the end loops of the springs.

Place the rolls on the studs, insert the cotter pins, and hook the ends of the springs over the rolls. *(K-474)*

This Formula Removes Masonry Rust Stains

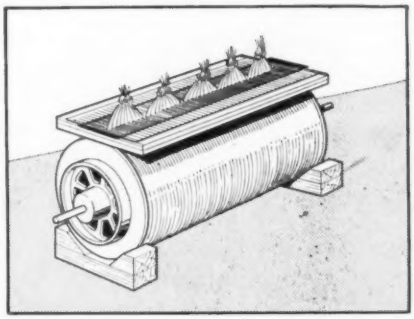
A good way to remove rust spots caused by metal attachments on the outside walls of plants is to use a solvent made up of one part sodium citrate, six parts glycerine, and sufficient whiting or hydrated lime to reduce the liquid to a paste.

With a heavy brush, apply the paste to the rust-stained area and allow it to dry for several hours. Renew the paste at intervals, allowing each coat to dry before the next one is applied, until the rust has been removed. Two or three coats will be sufficient to remove light stains, while several coats may be needed to remove stains of deep penetration. *(K-540)*

Storing Full Beams Aided by Wooden Rests

Storing full beams of yarn on the floor used to give us considerable trouble. These beams had been drawn in and were ready for the looms. Our practice was to place the beams horizontally on the floor, with the harnesses and reeds on top, and scotch them with wooden wedges placed under the beam flanges.

Often these wedges became displaced, allowing the beams to roll. The harnesses and ends were frequently broken and the reeds sometimes dam-



A wooden rest at each end of a drawn-in warp will hold the beam flanges firmly and prevent rolling that would damage the yarn ends, harness, and reed. The rests are made of two pieces of 2x4 nailed to a base of 2x6-in. lumber.

The Answer to Better Extracting...

PROCTOR Continuous Extracting Unit for Raw Stock

Here are the highlights of the operation of this modern unit, which replaces the laborious intermittent method of centrifugal extracting.

An automatic feed delivers a uniform amount of wet stock to the squeeze rolls. A vibrating plate, arranged between the self-feed and the squeeze rolls, feeds the layer of wet stock into the nip of the rolls in such a manner as to prevent droppage of wet stock or bunching of the material as it goes through the rolls.

Here are the results: There is better opening of matted stock . . . wet spots in dried stock are eliminated . . . production is constant and very high . . . time losses are virtually eliminated . . . operating costs are kept to a minimum.

The initial price of this modern Proctor unit is probably higher than that of any other extracting equipment made. However, when you consider that with it you can combine increased production with improved quality—it is obvious that the Proctor continuous extracting unit will pay for itself many times over. Even with the somewhat higher initial investment, viewed over the long run, Proctor equipment is actually the least expensive.

PHILADELPHIA 20, PA.

PROCTOR & SCHWARTZ INC.

KINKS & SHORT-CUTS

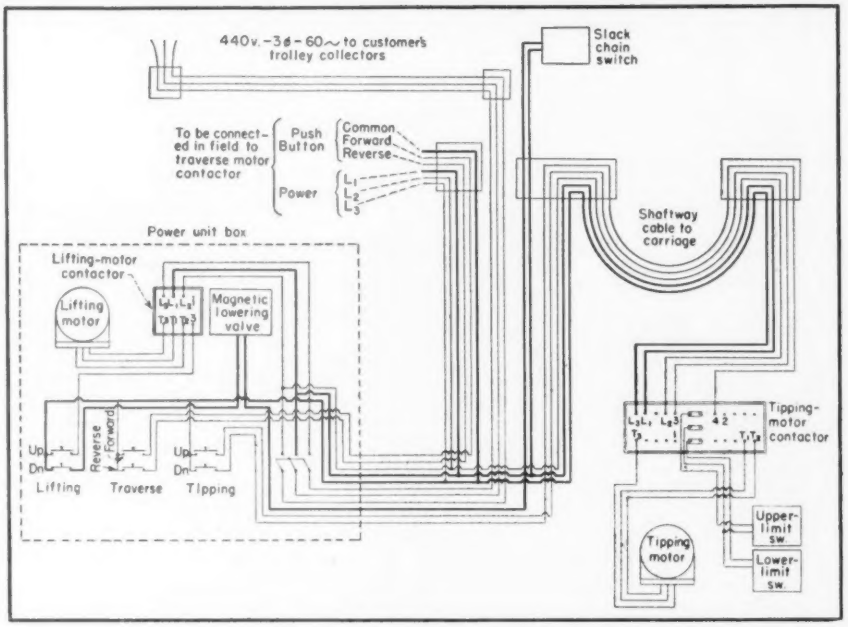
(*Continued from page 170*)

aged. The warps, of course, had to be redrawn.

To overcome this trouble, we made holders for the beams, as shown in the accompanying sketch.

The holder consists only of a piece of wood, such as a length of 2x6-in. lumber, laid flat on the floor. To each end of the 2x6, a short piece of 2x4 is nailed in a position horizontal to the warp beam. The upper inside edges of these pieces of 2x4 are beveled off, so that the flange of a beam placed on the holder rests snugly against each piece of 2x4 and also against the 2x6 base.

Two of these rests are needed for each beam stored. *(K-589) Arthur Spivey, Huntingdon, Quebec*



This circuit, which drives a materials-handling hoist, has been redesigned to include the slack-chain switch shown here. If the lifting chain breaks or stretches so that it endangers the load or the machines under the load, the power is automatically shut off the entire unit.

Caustic-Soda Desizing Aids Bleaching Process

We bleach table damask, some of which is mercerized and the rest of which is only plain bleached. For several years we used a desizing agent in our first wet-out that did nothing to the goods but desize them. Consequently, the goods that were to be plain bleached had to be treated with such heavy concentrations of chlorine liquor to remove the motes and trash that the strength of the cloth was weakened.

To avoid this loss of strength, I decided to try to improve our desizing method, so that weaker bleaching formulas could be used. Caustic soda proved satisfactory for this purpose.

I put the cloth through a caustic-soda solution, 2° Tw., at 120° F., and laid it down overnight. The results were much less mote and trash in the goods. In the bleach, we obtained cloth that was whiter, had a better luster, would take a better finish, and had more strength.

We now use the caustic-soda solution on the goods that are to be mercerized. *(K-627)*

Slack-Chain Switch Protects Hoist Load

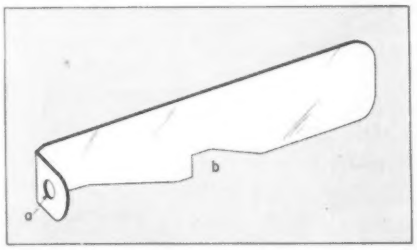
One type of trolley-mounted hoist used for handling materials has a hydraulic section designed for lifting or tilting the load with a smoother motion than is possible with a mechanical drive.

Such a hoist is particularly useful for transporting the load into and out of certain washing operations, in addition to moving it from one area of a department to another. In large mills, where maintenance men are trained as specialists on certain repair jobs and overhauling can be done in a central maintenance shop, this type of hoist is useful also in transporting motors or entire machines from one repair stall to another.

On the hoist which we use, a part of the hydraulic lifting and tilting unit consists of two roller chains. Occasionally, these chains would break or stretch; and unless the condition were detected and the fault repaired, the load and sometimes the machine in which it was being manipulated were damaged.

To correct this condition, we decided to install a switch that would cut off the power when the chain became slack. This switch, the arrangement of which is shown in the accompanying sketch, makes it impossible to operate the hoist while the chain is out of its proper adjustment. *(K-647) Paul C. Ziemke, Oak Ridge, Tenn.*

Winder Guideway Set With Gage



When it is necessary to adjust or change the diameters of tubes on our No. 77 Foster winders, we use a gage similar to the one shown here. The gage may be made of wood or bar steel. Place hole a over the adjustable stop screw and slot b over the guideway back of the guideway cones. Adjust the guideway with the screw until b fits snugly against the guideway. Gages for any desired diameters of bobbins can be made by varying the distance from a to b. (K-610)

Ultraviolet Light Used for Testing Cloth

Fluorescence is finding a place in textile testing. Many substances that are partially transparent will reflect light of a characteristic color when exposed to ultraviolet light. Any variation from the characteristic color reflection (fluorescence) of a particular substance is an indication that the substance has become contaminated.

For example, if there is a spot of oil on a piece of cloth, ultraviolet light will create a distinctive fluorescence from the oil. Furthermore, since most oils can be identified by fluorescence, the spot of oil on the cloth can be identified and traced to its possible sources. In this manner, faulty handling of cloth can be detected.

Many faults in finishing processes can also be shown up by the use of fluorescent dyes. Processing that leaves irregular conditions in the cloth, al-

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Waynesville, N. C. plant, devoted exclusively to manufacturing textile products designed to help you produce finer textiles more economically.

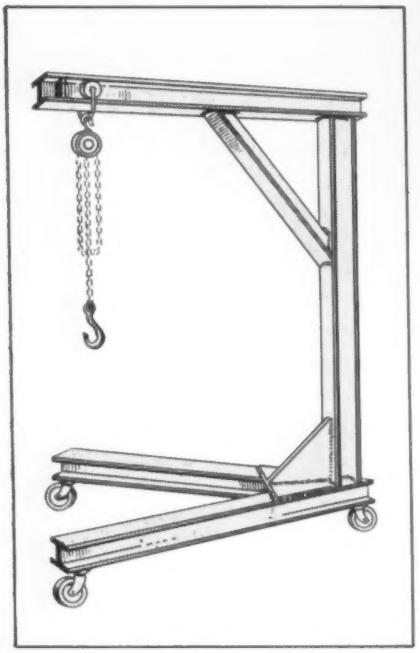
KINKS & SHORT-CUTS

(Continued from page 172)

though invisible to the eye in daylight, will become readily visible under ultraviolet light.

Other applications of fluorescence include: (1) adulterated oil will show a different fluorescence from unadulterated oil, (2) cotton cloth made to resemble linen will be quickly indicated by its lack of fluorescence, since linen will fluoresce a brilliant canary yellow, (3) mildew in cotton, wool, or rayon will show a blue-green color. *(K-644) American Cyanamid Co.*

Portable Hoist Has Many Mill Uses



Shop mechanics frequently have need for a portable hoist. One mill uses a hoist similar to the one shown here for lifting and transporting motors, machine parts, etc. (K-613)

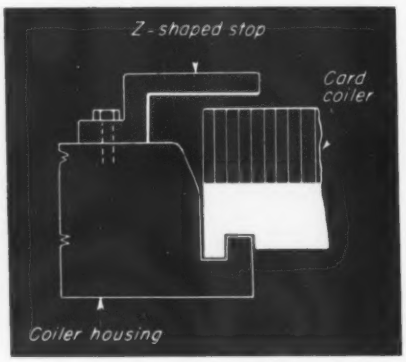
Jumping Card Coiler Held by Z-Shaped Stop

In practically every cotton mill, a card tender now and then is unable to doff the cards strictly on schedule because of other duties—cleaning, laying laps, etc. If he is delayed several minutes, the cans will become so full that the pressure of the sliver against the under side of the coilers may force the coiler out of place. This displacement of the coiler may result in broken gear teeth, either in the tube gear or coiler gear.

To prevent damage to these gears, we have placed stops on the housing of our coilers so that full cans cannot force the coilers out of their running tracks.

The stops are somewhat in the shape of a reversed Z. The base of the Z, as shown in the accompanying sketch, is fastened to the coiler housing with a screw. The upper part of the Z extends over the edge of the coiler, clearing the coiler about 1/16 or $\frac{1}{8}$ in.

A stop should be placed on each side of the coiler to hold it in a balanced position in case pressure is exerted by a full can of sliver. *(K-611)*



Card coilers being forced out of their running positions, and possibly broken gear teeth resulting, can be prevented by the use of tube-gear stops. These stops are screwed to the coiler housing in such a position that one end extends over the running tube gear.

Make Your Own Gage For Setting Picking Shoes

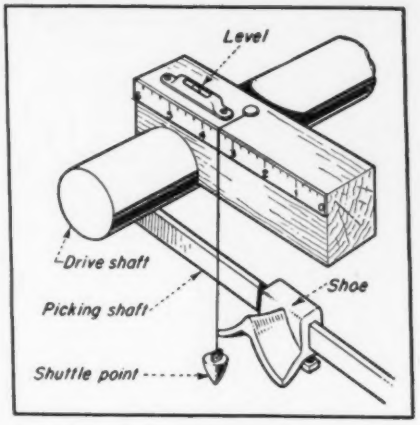
Setting the picking shoe of a loom can be done accurately and easily if a gage such as the one shown in the accompanying sketch is used.

Cut a 6-in. length of 2x4-in. lumber and bore a half circle the size of the drive shaft at one end. When the gage is in use, this half circle should fit snugly over the shaft.

To the upper side of the 2x4, fasten a small bead level. Along the upper edge of the gage, secure a ruler or measure and mark $\frac{1}{4}$-in. graduations so that the end above the half circle is 6 and the opposite end is 0.

Secure a shuttle point to serve as a bob, and attach a string to it. A thumb tack can be used to hold the other end of the string along the scale.

To use the gage, place the half circle over the drive shaft, as shown in the sketch. Raise or lower the extended end of the 2x4 until the bead shows level. Insert the thumb tack so that the plumb line extends downward at the required distance from the drive shaft. Set the point of the picking shoe at the point indicated by the plumb bob. *(K-637) H. E. Wenrich, Berwick, Pa.*



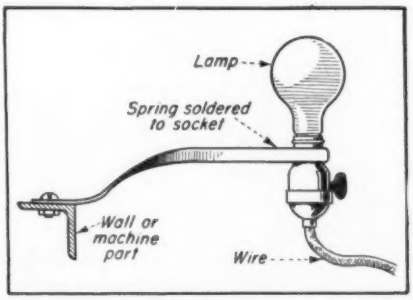
Accurate adjustment of a picking shoe can be made with a gage similar to the one shown here. If the scale on the 2x4 is graduated in $\frac{1}{4}$ in., intermediate points must be estimated. The point of the picking shoe should be set at the distance from the drive shaft indicated by the plumb bob.

Mount Signal Lights On Shock Absorbers

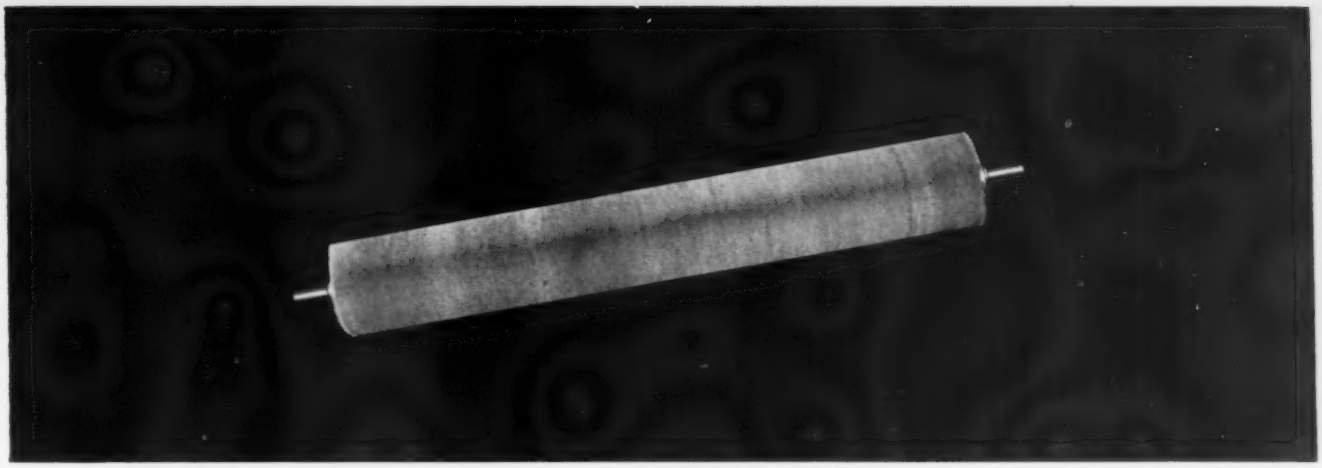
Vibration causes many signal lights, such as the generator pilot light on a warp-stop motion, to fail prematurely. The life of these bulbs can be prolonged by installing them on a spring base to absorb most of the vibration.

Bolt one end of a short length of weak spring steel to the wall or machine part near the location of the signal light. Solder the bulb socket to the other end of the spring steel. (In some instances, it may be desirable to insulate one or both ends of the spring steel.)

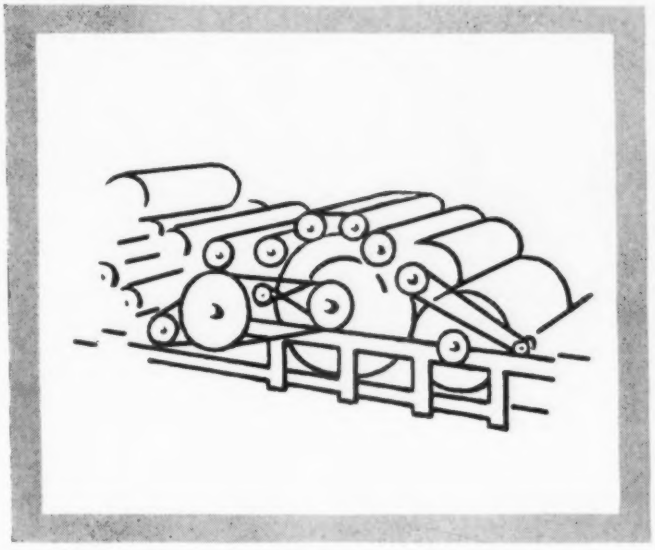
The wire leading to the socket should be left amply long, so that all the vibration is absorbed by the spring and not transferred to the wire. *(K-638)*



Spring-steel mountings for signal lights located in areas subject to much vibration will aid in lengthening the life of bulbs. The vibration is absorbed by the spring steel instead of being transferred to the bulb.



Fullergript WORSTED Card Brushes



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THIS IS NO. 63 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

WORN THREAD GUIDES
(No. 50 Winding Machine)

When steel thread guides have been in use a long time, particularly when winding silk or other abrasive material, "thread cuts" may be found in a criss-cross pattern on the face of the guide. If the cuts are small and shallow, they will not cause much, if any damage.

However, when they become deep enough to be plainly visible, there

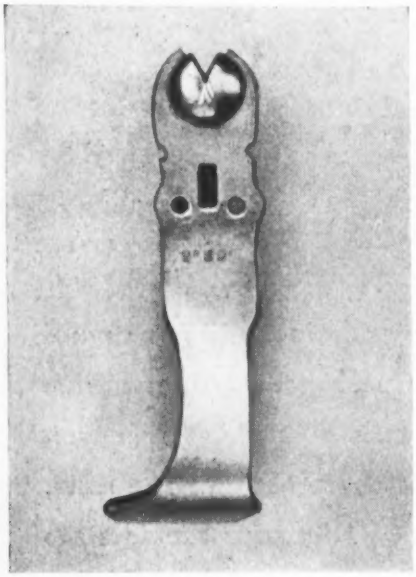

Fig. 1. Criss-cross grooves cut in guide are serious enough to necessitate replacement.

is the danger of abrasion as the yarn is pulled from side to side over the face. This danger is increased when a change is made from one yarn size to another.

There is also the possibility of stitches forming, due to the short "dwell" of yarn when it transfers from one cut to another at the end of a traverse.

Either of these faults is costly enough to warrant replacing guides before they are deeply cut.

Occasionally a guide is used that has much too wide a slot for the yarn being wound. This causes a dwell at the end of the traverse that results in an improper lay of yarn

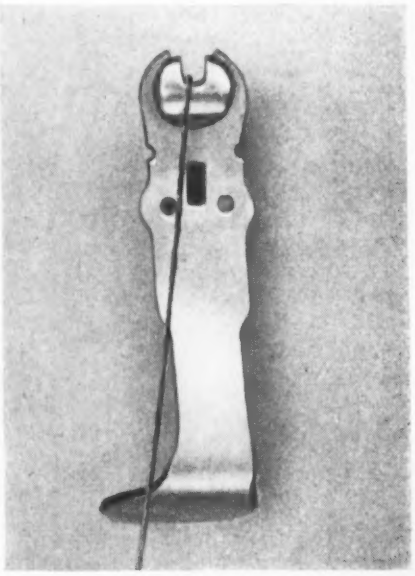

Fig. 2. The slot in this guide is too wide for the yarn. Improper lay of yarn and hard ends will result.

and in hard ends. Then, as wear takes place at the corners of the guide, there is an increasing tendency to throw stitches over the ends of the package.

Porcelain guides become very abrasive when cut, and any chafing is particularly disastrous to filament yarns.

HANDLING SWIFTS
(No. 60 Winding Machine)

Some mills have reported that their operators have difficulty in putting swifts in position where the band-type brake is used.

This can be overcome by better control of the swift and by release of the brake.

The swift should be held at the hub by the left hand. The right hand

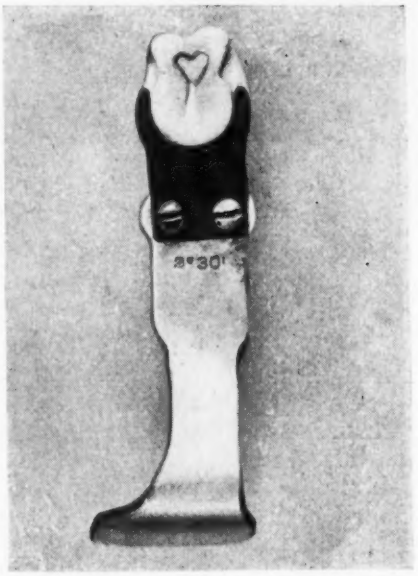

Fig. 3. Cuts in the slot were made by the yarn and, in turn, will chafe the yarn.

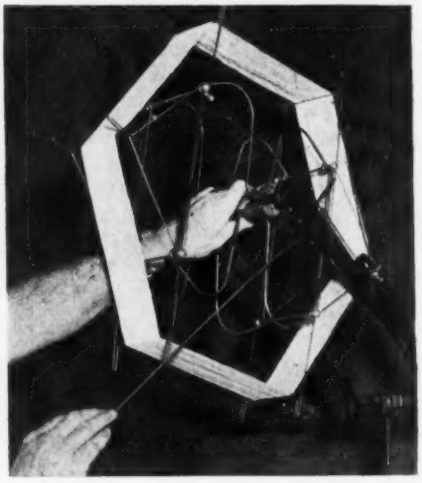

Fig. 4. Compensator is held down while swift is placed in position in the brackets.

should be used to pull the compensator down; this releases the brake and permits placing the swift in position in the brackets without difficulty.

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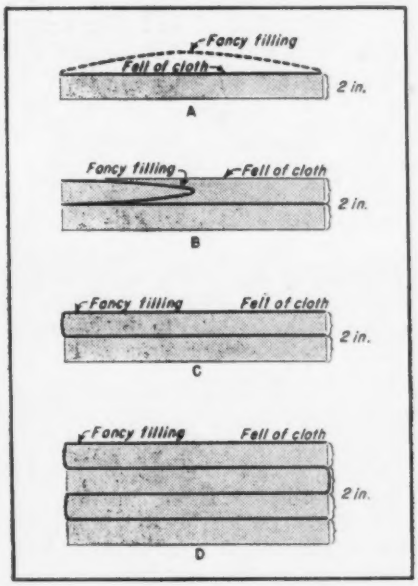
Round Table

FOR EXCHANGE OF IDEAS

The Round Table is designed to supply a meeting place where mill men can discuss problems among themselves. It is open to all readers for discussion of subjects relating to mill management and operation. Names of contributors to the Round Table will be held confidential if so requested, but sign contributions with your real name and address as evidence of good faith and to permit payment for items published. Address contributions to: Editor Round Table, Textile World, 330 West 42nd St., New York 18, N. Y.

This Weaving Method Yields Single-Pick Effect

A dobby loom with a circular box motion is one of the best types of looms for weaving dress goods and similar cloths. Many designers, however, assume that they cannot produce a fabric consisting of three filling picks of the same count but of different colors and one pick that has a pronounced fancy effect.



To insert one pick of fancy filling at intervals of 2 in. in cloth being woven on a dobby loom with a circular box motion, pick the fancy shuttle from right to left, close the shed, and pick the shuttle from left to right. The result is a floating pick, A. After weaving 2 in., close the shed, pick the shuttle from right to left to take up the float, B. Now open the shed and pick the shuttle from left to right, C. The finished effect is shown at D.

The difficulty, of course, is that each shuttle must weave two picks before the loom changes shuttles. If the fancy pick is required at intervals of 2 in., for example, in order to give the desired effect, two adjacent picks would make the fancy stripe too bold. This difficulty can be solved by permitting the shuttle to insert only one pick even though it crosses the fabric twice.

Suppose that a mantle cloth is to be woven with a ground composed of a sateen weave in which two different shades of 15/2 wool are used for the filling and with a fancy effect obtained by inserting one fancy filling pick every 2 in. of woven cloth. The cloth could be woven on a dobby loom with a circular box motion in the following manner:

After the first 2 in. of the cloth is woven, the shuttle containing the fancy filling is picked from right to left, inserting a pick in the fabric. When the shuttle is picked back across the loom (from left to right), all the harnesses are held down by leaving the peg out of the appropriate dobby lag. The shuttle, on this pick, travels on top of the warp, leaving a pick of yarn on top of the cloth, A in the accompanying sketch.

This loose pick of yarn floats on top of the cloth until another 2 in. have been woven. The fancy shuttle is then picked from right to left, with the harnesses down. As the shuttle travels over the warp, the floating filling pick is carried along part of the way across the loom, *B* in the sketch. The shed opens, and the shuttle is picked from

TEXTILE TICKLES . . . . . By Edgar Allen, Jr.

"Sure, I've had bleaching experience—I was a brunette last week!"

left to right. The floating filling is pulled into the shed, leaving a 2-in. loop (from the first fancy pick to the second) along the left-hand selvage, *C* in the sketch. This selvage loop alternates from left to right each 2 in., *D* in the sketch.

For this type of work, shuttles must be specially prepared. The fancy filling, before leaving the shuttle, should pass between a metal bar and a tight brush pulled through a hole in the bottom of the shuttle. Both the bar and the brush should be fixed in the shuttle nose. Enough tension should be applied to the yarn to take up the slack yarn floating on top of the cloth before more filling is wound off the quill.

Both sides of the shuttle should be lined with fur in order to prevent ballooning. For coarser filling, a shuttle with an adjustable spring to facilitate the sliding through of knots or loops is preferable.

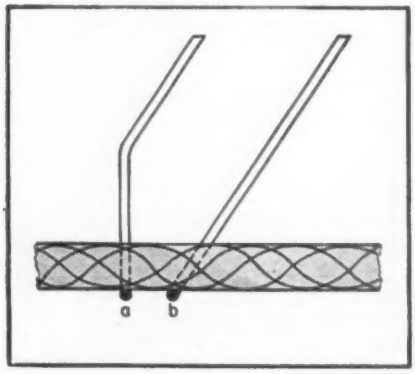
The amount of filling waste made in weaving in this manner is small, providing the shuttles have been properly prepared. This method cannot be applied, however, to heavy goods, since the strain of lowering all the harnesses at one time would be too great. *(R-339)*

Why Is Knee Wire Needed For Card Clothing?

Why is cotton-card clothing made with a knee in it?

It seems to me that straight clothing wire set at an angle in the clothing base, as shown at *b* in the accompanying sketch, would have these advantages over knee wire: (1) it would not load so easily, (2) it would strip more freely, and (3) it would permit a more satisfactory point to be obtained from grinding. *(R-334)*

This question, sent in by a reader, is quite interesting. TEXTILE WORLD *welcomes discussion of this inquiry from other readers of Round Table.*—Editor



Would straight clothing wire b prove more satisfactory for cotton cards than conventional knee wire a?

USSR Shuttleless Loom Achieves High Output

A shuttleless loom is the highlight of the current exhibition recently opened by the USSR Ministry of the Textile Industry, it is reported from Moscow by McGraw-Hill World News Bureau. The Leontyev loom, as the machine is called, is reportedly superior to any heretofore invented, according to Soviet press reports. Only 19 of the looms, Russian papers report, can produce the same amount of fabric ordinarily turned out by 24 shuttle-type looms.

Baling-Tie Paint in Cotton Causes Processing Trouble

Trouble with paint on cotton baling ties in a lot of cotton received from two shippers through a compress in the Southwest has been reported by a mill, according to information released by the American Cotton Mfrs. Assn.

The baling ties apparently had been painted with an asphalt-type paint that had a tar base. When cotton sticking to the ties was picked off and put into process, some of the asphalt material came off the ties and remained in the cotton. The cards did not remove this paint material, and it caused considerable trouble in later processes.

The American Cotton Mfrs. Assn. recommends that mills carefully examine baling ties and refrain from picking ties in instances where foreign matter, such as this paint, might stick to the cotton. *(R-335)*

A recent complaint from a corduroy processing plant was also based on particles of coating from new cotton bales, according to a release by The Cotton-Textile Institute, Inc. Blackish-brown spots appeared at intervals in the gray goods. These spots could not be removed and the cloth consequently could not be used for finishing in light shades.

Investigation proved that such ordinary causes of spots as splashed oil, belt dressing, rust stains, and roof leakage did not cause the spots. Chemical analysis of the foreign matter in the cloth revealed that the source of trouble was the coating used on the cotton baling ties to prevent rust. *(R-337)*

DYES & CHEMICALS — PRODUCTS & PROCESSES

Starch Stabilizer Maintains Size Quality

VANESTA; R. T. Vanderbilt Co., 230 Park Ave., New York 17.

A new starch stabilizer said to make it possible to maintain the initial quality of a starch dispersion without chemical retrogradation has been announced by R. T. Vanderbilt Co. Retrogradation, which usually begins soon after the starch dispersion is made and which results in irregularities in slashing and printing, causes the starch film to become less adhesive and to have varying penetration, flow, and coverage. Due to retrogradation, it is usually necessary to discard all starch size remaining at the end of a day's operations.

The addition of ½ to 1% of Vanesta to a starch size before cooking and converting is said to prevent abnormal thickening and to result in starch products of stable viscosity, excellent film-forming properties, and good adhesion. When the cold viscosity of a dispersion is sufficiently fluid to allow the mix to flow through the pipe lines, Vanesta-stabilized sizes may be kept over night, as they will return to their original viscosity and adhesive properties on stirring and heating, it is stated.

Alcohol Sulphate Detergent Effective After-Treatment

ALROSENE 31; Alrose Chemical Co., 180 Mill St., Cranston, R. I.

A modified alcohol sulphate detergent which is reported to be also highly effective as a wetting agent on woolens has been announced by Alrose Chemical Co. For application mainly in soaping prints, improving shade brightness and hand, eliminating scumming, and reducing color bleeding, Alrosene 31 also is reported to permit operation at lower temperatures and to cause no lime-soap de-

(Continued on page 180)

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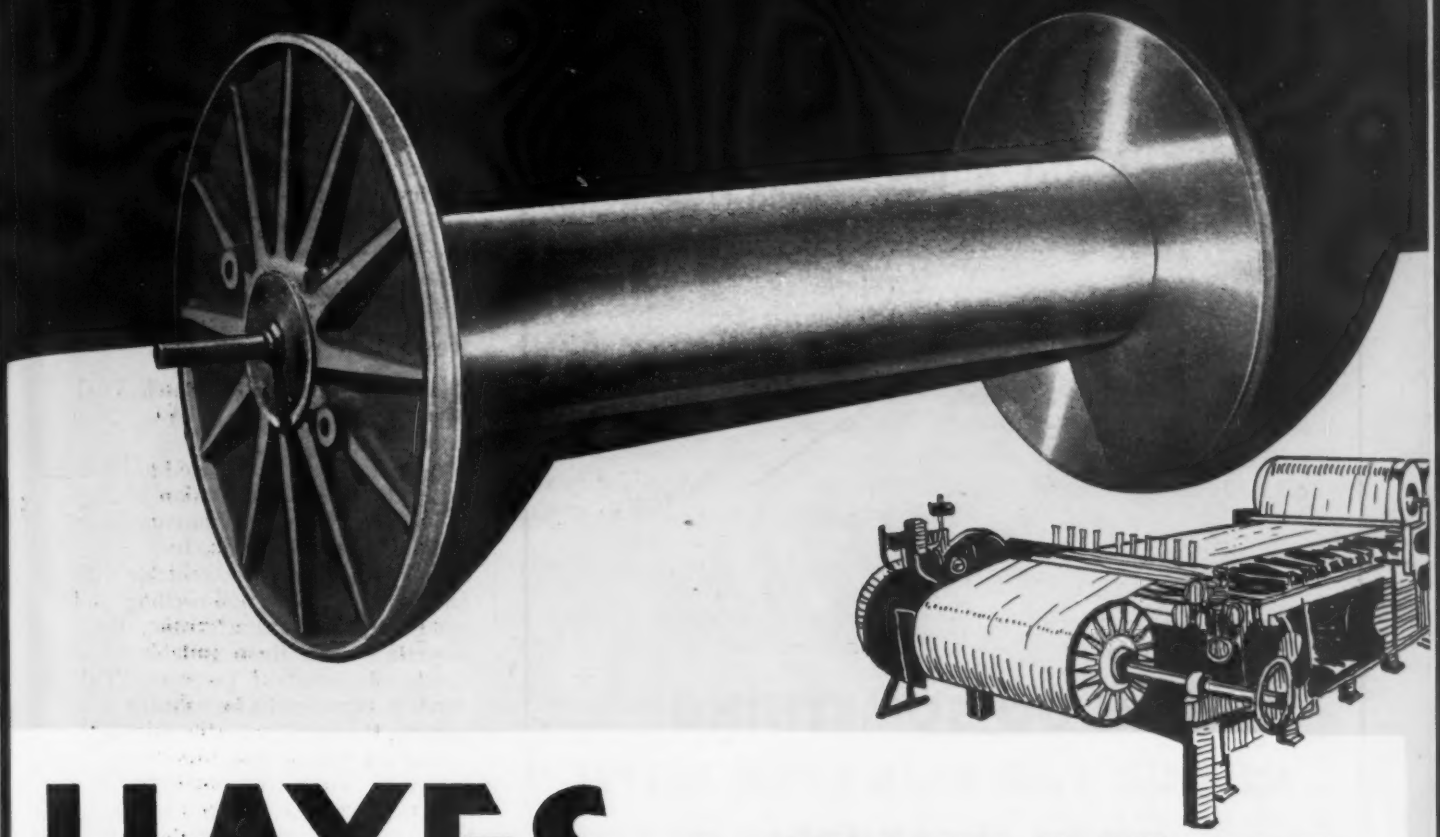

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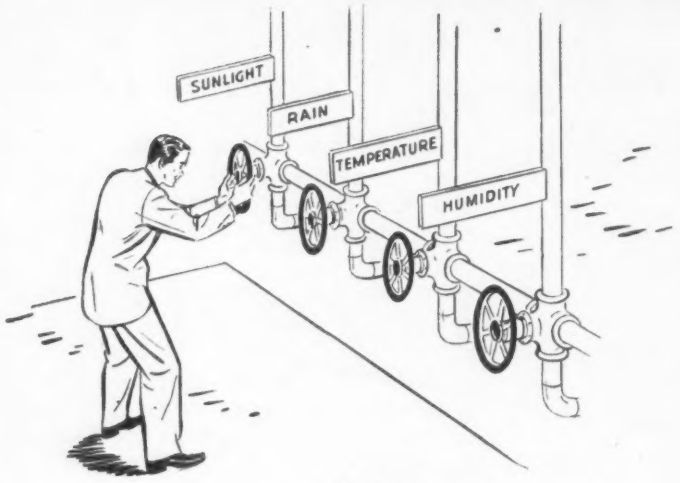

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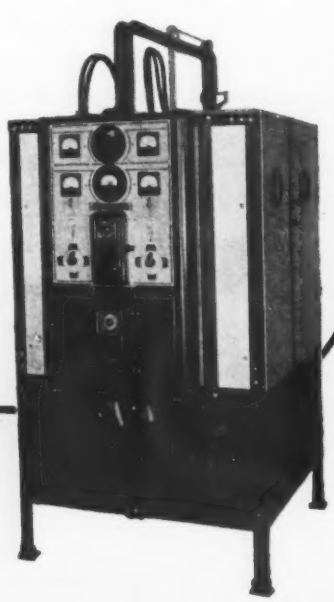

ATLAS ELECTRIC DEVICES CO.
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(Continued from page 178)

posits, discoloration, rancidity, or interference with further processing when used as a scouring agent for raw wool, rayons, acetates, and cottons. Alrosene 31 is also suggested for use as a levelling agent, and penetrant with acid, vat, developed sulphur, and direct colors.

"Vulcanized" Starch Resistant to Swelling

VULCA-100; National Starch Products, Inc., 270 Madison Ave., New York 16.

A "vulcanized" starch, said to be resistant to the swelling action of heat and chemicals, has been announced by National Starch Products, Inc.

As Vulca starches are available with various degrees of non-swelling and non-gelatinizing characteristics, these properties make them suitable for a variety of industrial purposes. This starch is expected to be valuable as a printing thickener in textile printing.

The completely vulcanized starch, known as Vulca-100, answers industrial requirements for an inert, non-toxic organic filler or ingredient, it is reported, and can be cooked in boiling water or a 5% alkaline solution without increasing its average granule size more than five microns. Approximately neutral in water suspension, the starch is said to settle after cooking because the granules are not appreciably swollen or ruptured.

The product reputedly is non-toxic and is not rapidly hydrolized by acids or enzymes. Steam sterilization makes no essential change in any of the properties of Vulca-100, according to the manufacturer.

New Vat Dye for Use as Self Color or in Shading

CALCOSOL COPPER BROWN PASTE; Calco Chemical Div., American Cyanamid Co., Bound Brook, N. J.

A new anthraquinone vat dye, Calcosol Copper Brown Paste, giving a reddish shade of brown with very good fastness to light, washing, and bleaching, has been announced by Calco Chemical Div., American Cyanamid Co.

The new dye, due to its shade and excellent working properties, is recommended to dyers not only as a good self color but also as an important all-purpose shading color. It is said to be especially good as a shading color for dusty roses, grays, and light- to medium-shade browns.

For Uniform Results In Textile Wet Processing . . . Use Hooker Chemicals

Whatever the textiles with which you are working —cottons, woolens or synthetics—there are Hooker Chemicals that will make your work easier, and help you maintain high standards of quality.

That's because Hooker, too, maintains high standards of purity and uniformity in the chemicals it manufactures. Your bleaching, dyeing and finishing processes can be smooth and trouble-free, and your results consistently uniform when you use Hooker Chemicals.

Continued improvements in manufacturing processes and equipment, careful supervision and control, strictly maintained specifications of purity are tenets of Hooker operations. All these combine to bring you chemicals that make standardizing of your operations practical.

Some of the Hooker Dyestuff and Textile Chemicals and the principal Hooker specifications are listed below. More complete information and samples will be furnished when requested on your business letterhead.

Hooker Products List, Bulletin 100, contains chemical and physical characteristics, uses and shipping information on nearly 100 Hooker Chemicals, many of them for the textile and dye industries. Send for a copy.

PRODUCT *Chemical Formula; Molecular Weight*	HOOKER SPECIFICATIONS	SUGGESTED USES
Antimony Trichloride Anhydrous $SbCl_3$; 288.1	Antimony Trichloride..... 99% Min. Iron and Arsenic..... 1% Max. Lead..... 0%	Catalyst in organic synthesis; mordant in textile printing. Moisture and fireproofing textiles.
Benzal Chloride $C_6H_5CHCl_2$; 161.0	Clear, yellow liquid. Boiling Range..... 200 to 235°C Specific Gravity 15.5°/15.5°C..... 1.279 ± .005	Dyestuff intermediate.
Chloranisidine $NH_2C_6H_3ClOCH_3$; 157.5	Gray crystalline solid. Melting Point..... 79°C Min. Diazo Test..... Relatively clear.	Dyestuff intermediate.
Lauryl Pyridinium Chloride C_5H_5N ($C_{12.6}H_{26.2}$)Cl; 292.0	Mottled tan, semi-solid. Solubility in water is 60 gms. per 100 gms. of water. Alkyl Pyridinium Chloride (Calc. as C_{12}) ..... 85.0% Min.	Cationic detergent. Wetting and cleaning agent for textile fibers. As a leveling agent and color modifier in dyeing.
Monochlorbenzene C_6H_5Cl; 112.5	Clear, colorless liquid. Distillation Range..... 131.3 to 132.3°C	Dyestuff intermediate, preparation of sulfur black, brown dyes. Solvent.
Orthodichlorbenzene, Tech. $C_6H_4Cl_2$; 147	Clear, colorless liquid. Freezing Point..... −10° to −22°C Boiling Range..... 6° including 179°C	Manufacture of pyrocatechin, dye intermediates, other synthetic organic chemicals. Degreasing wool.
Phosgene (Carbonyl Chloride) $COCl_2$; 98.9	Colorless gas at ordinary temperatures. Does not discolor a 0.2% solution of KI when vigorously bubbled through it for one half hour. (Test for free chlorine)	Dye intermediate; chlorinating agent.
Sodium Sulfhydrate NaSH; 56.1	NaSH..... 70 to 72% Na_2S..... .25 to 2.5% Fe..... 5 ppm Max. NaCl..... .4 to .8% Na_2So_3 and $NaHCO_3$..... .04 to .4% Cu, Ni, Cr, Mn, Pb..... 1 ppm Max. Water of crystallization..... 28 to 26%	Desulfurizing rayon; calico printing; in sulfur dye baths.
Sodium Sulfide Na_2S; 78.1	Na_2S..... 60 to 62% Fe..... 8 ppm Max. NaCl..... 1.5% Max. Other Na Salts..... 2.0% Max. Cu, Ni, Cr, Mn, Pb..... 1 ppm Max. Water of crystallization..... 36.5 to 34.5%	Desulfurizing rayon; calico printing; in sulfur dye baths.

HOOKER ELECTROCHEMICAL COMPANY

HOOKER CHEMICALS

From the salt of the earth

4 FORTY-SEVENTH ST., NIAGARA FALLS, N. Y.
New York, N.Y. Wilmington, Calif. Tacoma, Wash.

Caustic Soda **Chlorine** **Muriatic Acid** **Paradichlorbenzene** 2424

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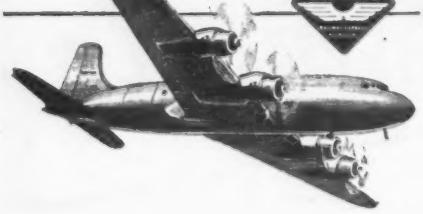

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To Air Express a 16-lb. shipment **1349** miles costs only **$6.39!** Heavier weights — any distance — similarly inexpensive. Investigate!

Questions AND Answers

Ribbons With Plain Patterns May Be Cut After Printing

Technical Editor:

In the answer to Question 9148 ("Fusing Quality of Acetate Used to Prevent Unraveling," TW, Dec., 1946, page 188), it is recommended that labels woven of acetate rayon and sealed by fusing the edges with heat be slit with a multiple slitter off the loom or with slitting knives installed on the loom. If the first method is used, is it practicable to print the label or ribbon design before the slitting is done?

Is it necessary to use acetate rayon for both warp and filling? (9167)

Whether or not it is practicable to

Both of these ribbons were woven on broad looms, cut in the desired widths, and sealed at the edges by fusing the cut ends of filling. Heat or acid may be used for the fusing process.

Ribbon a, printed with one color in a plain stripe pattern, may be printed before slitting. Ribbon b was printed with two colors in a more complex pattern. It is better to print this type of design after the ribbons have been cut.

Trucks that SAVE { TIME, MONEY, EFFORT

Box Truck

Steel Dolly

The "Up-Ender" —upends barrels and drums

Universal Drum Truck

Heavy Duty Truck

Platform Truck

The Lift-Jack

Wood or Steel Skids

. . . and every one a *Long Life*

Colson

NEED CASTERS?

Colson produces sizes and types for every purpose. Thread guards are available for many models.

Yes, textile manufacturers can look to Colson for trucks that—

SAVE TIME by streamlining the flow of goods from raw materials to finished products—

SAVE MONEY by cutting handling costs—

SAVE EFFORT by handling heavy loads easily and safely.

The trucks shown here are only a few of the many dependable COLSON models—all designed to meet the requirements of the textile industry. Write for detailed information.

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CASTERS • INDUSTRIAL TRUCKS AND PLATFORMS • LIFT JACK SYSTEMS • BICYCLES • CHILDREN'S VEHICLES
WHEEL CHAIRS • WHEEL STRETCHERS • INHALATORS • TRAY TRUCKS • DISH TRUCKS • INSTRUMENT TABLES

Attach hanger strap to outlet box
Screw stems into channel
Slip canopy over stems
Slide stems into slots of hanger straps
Position canopy. (The job is done.)

NEWEST SILV-A-KING FLUORESCENT FIXTURE

THE *Vanguard*

for commercial installations

2148 QS

Can be suspended as illustrated

A quarter-century of quality engineering stands behind the new SILV-A-KING "Vanguard." Install it in offices, stores, showrooms, hospitals, and schools — to satisfy the most exacting demands!

"VANGUARD" QUALITY FEATURES:

LOUVRE Egg-crate louvre shields lamps, provides maximum diffusion.

SLOTTED END PIECES Engineered to provide soft light glow. Eliminates dark ends.

SIDE PANELS Steel frames eliminate danger of sharp edges, add strength. Securely top-hinged to facilitate maintenance.

CANOPY AND STEMS (Optional) Precision fitted. Matte aluminum finish.

GLASS Frosted ribbed glass panels intensify light diffusion, remove glare.

STANDARDS I.B.E.W., A.F. of L.; approved and listed by Underwriters Laboratories, Inc.

FINISH All metal surfaces in high-temperature, baked white enamel of high reflectivity, lasting quality.

New-Type Hanger Strap, for easy suspension installation . . . a one man job!

Hinged mechanism allows side panels to open and plumb themselves, for easy access.

Write for new "Vanguard" Bulletin!

BRIGHT LIGHT REFLECTOR COMPANY, INC.

Fairfield at State, Bridgeport 5, Conn.

Subsidiary of Bridgeport Pressed Steel Corp.

SILV-A-KING LIGHTING EQUIPMENT

print the full width of cloth before slitting the ribbons and sealing the edges with heat depends entirely upon the printing design.

In the case of the two accompanying samples, sample a is printed in one-color stripes. It would be quite practicable to print this design before the slitting is done. Sample b, however, contains a design with several characters that appear at definite intervals and with a border at each side. It also contains two colors. It would be difficult to slit cloth with such a design so that the design would have the proper appearance throughout the lengths of the multiple ribbons.

It is not necessary to use acetate rayon for the warp, but it should be used for the filling, since this is the only kind of rayon that will respond satisfactorily to fusing. After the fusing has been done, the ribbon should be handled carefully. If crosswise friction is placed on the edges of the ribbon, the fused ends of filling will be torn apart and permit the warp yarns to unravel.

Certain acids are sometimes used instead of heat as the fusing agent. The acid is sprayed on the edges of a ribbon, or the ribbon edges are dipped or wiped lightly with the acid. After the acid treatment, the roll of ribbon is placed near hot bulbs to dry. The roll should be rewound for inspection and for clipping lose ends.

Full-Fashioned Machines Used for Knitting Neckties

Technical Editor:

Recently I saw some neckties that were made on rebuilt German full-fashioned knitting machines. Can you advise me as to what changes are necessary to a full-fashioned machine in order to convert it to knitting neckwear and whether or not any firms in this country are specializing in such rebuilding? (9169)

There are a few knitters in the United States that are producing neckties on rebuilt full-fashioned knitting machines. It is not necessary, however, to limit this type of production to German-made machines. Practically any make of leggers can be used.

The leggers converted to knitting neckties are usually rebuilt to produce two ties per section. It is necessary to have double narrowing fingers and double slur cams for each section. A smaller coulier cam is ordinarily used; and for producing fancy neckties on coarse-gage machines (33 to 39 gage), lace and striping attachments are also used.

There are no firms in this country

CALLS FOR CAUSTIC SODA KEEP US BUZZING

Seems as if *everybody* wants Caustic Soda these days! The *soap* industry continues to order huge quantities of it . . . as more and more uses are developed for this bathroom necessity. Soap plays an important part in the production of synthetic rubber tires. From glycerin—formed in soap's manufacture—come dynamite and nitroglycerin, standbys in mining and road-building. Caustic Soda is also making great contributions to the development of the *rayon* industry. Because of it, fabrics are finer and stronger of texture. Caustic Soda is of benefit in the manufacture of materials used in rugs, draperies, automobile upholstery and tire cord. It enters—directly or indirectly—into the making of pulp and paper, petroleum products, many industrial chemicals. All these demands for Caustic Soda in addition to the increasing requirements from expanding industry—have made it impossible to supply the total demand. Although our production facilities are operating at capacity, we are allocating all our Caustic Soda to our old customers. Fairness requires us to do what we can to meet their needs first. Meanwhile, we are doing everything possible to increase our production of Wyandotte Caustic Soda. And we anticipate the day when we shall be able to tell every user of this chemical: "Sure, we have *plenty* of Caustic Soda. How much do you want?"

WYANDOTTE CHEMICALS CORPORATION

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Soda Ash • Caustic Soda • Bicarbonate of Soda • Calcium Carbonate • Calcium Chloride • Chlorine Hydrogen • Sodium Zincates • Aromatic Intermediates • Dry Ice • Other Organic and Inorganic Chemicals

Wyandotte
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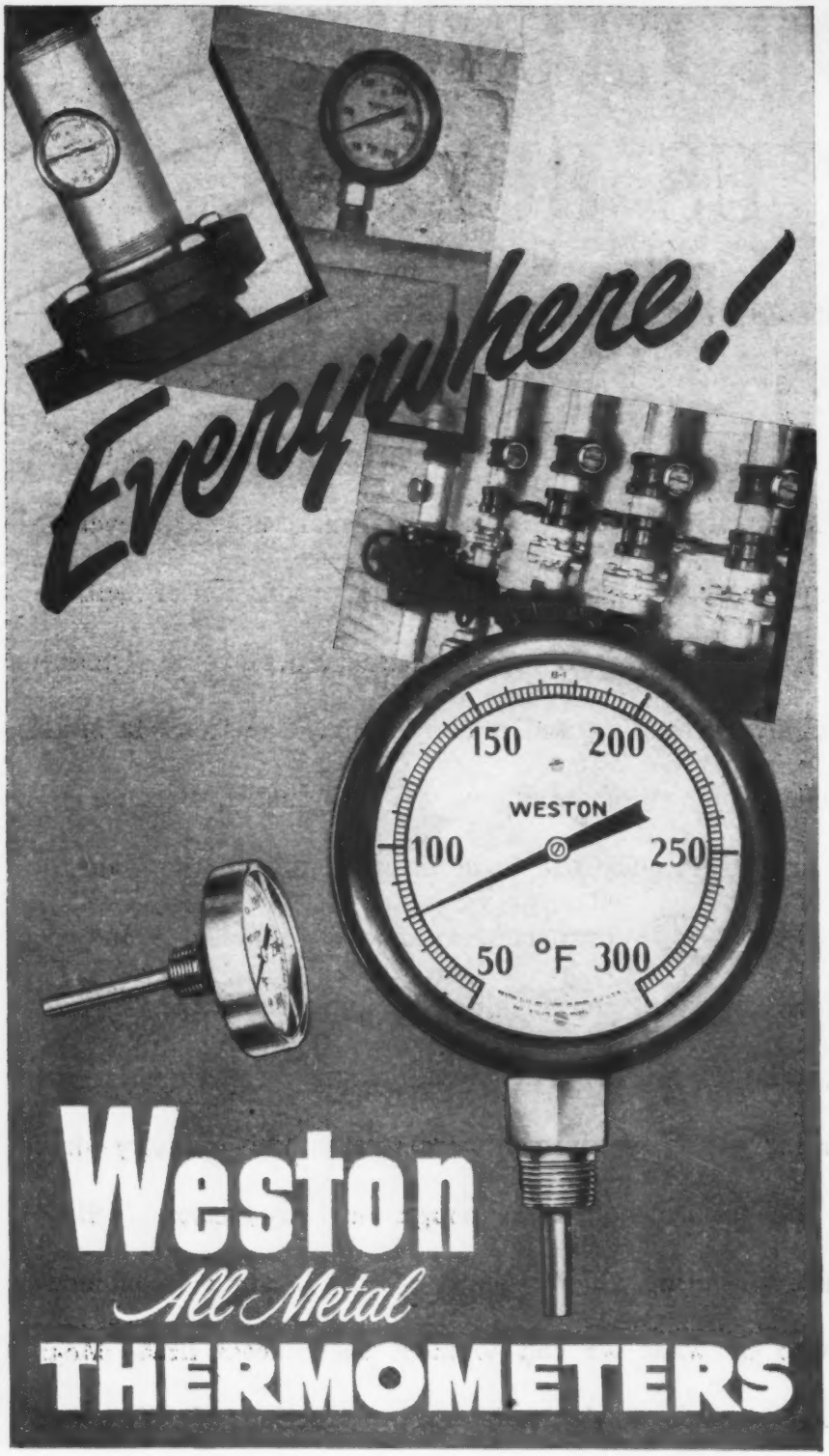


On equipment, on pipe lines, on bearings . . . wherever temperatures are critical, the WESTON Thermometer is now widely used because of its *readability*, its all-metal *ruggedness*, and its proved, long-time *dependability*. Available for general requirements, including a Max-Min Model which indicates high or low temperature reached since last setting. If your jobber cannot supply you, ask your local WESTON representative, or write . . . Weston Electrical Instrument Corporation, 690 Frelinghuysen Avenue, Newark 5, New Jersey.

WESTON *Instruments*

that specializes in rebuilding full-fashioned machines along this line. It probably would be difficult to obtain the necessary parts, and most of the parts very likely would have to be designed and made by hand.

Wet Finishing of Jersey May Be Semicontinuous

Technical Editor:

We are considering bleaching, dyeing, and finishing jersey fabrics and would like to know the types of machines used and the order of processing recommended for these goods. The cloth would be worsted, cotton, rayon, or blends of these three. (9170)

Jersey cloth of any of these four types should be handled slack in all operations. The general sequence of operations should be as follows:

Scouring or boiling off
Bleaching
Dyeing
Extracting or squeezing
Drying and finishing
Winding.

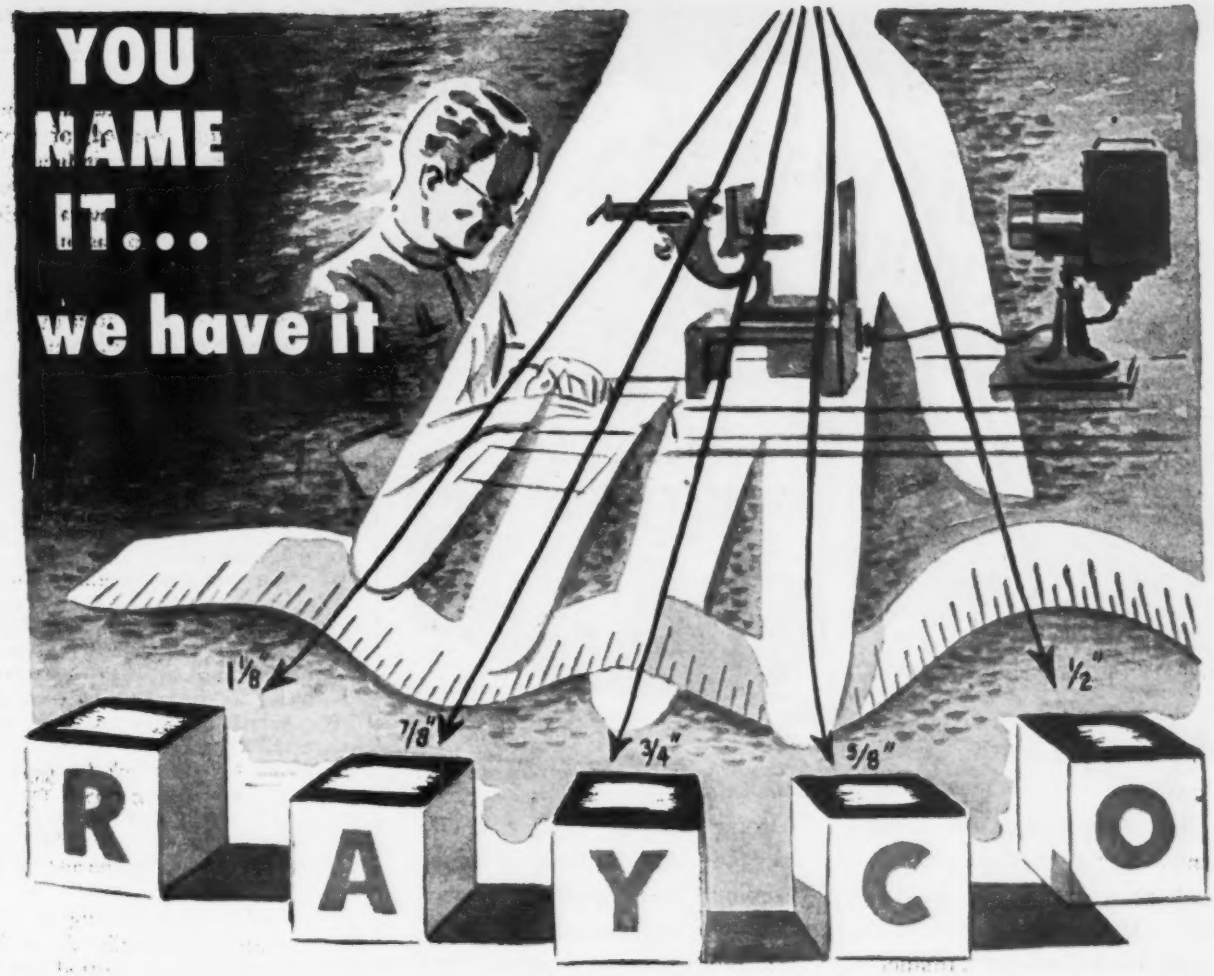
In the scouring, bleaching, and dyeing operations, reel machines or becks are employed. In these machines, the fabric is usually entered one piece at a time, with the ends of the pieces tacked together, until the machine is loaded. The scouring, bleaching, and dyeing operations are all done in the same machine.

It is sometimes practicable to arrange three machines in tandem, so that the scouring is done in the first machine, bleaching in the second, and dyeing in the third. If such is the case, the ends of the pieces are usually sewed together and the entire kettle is loaded from one end. The entering end of the cloth is then sewed to the last end going into the kettle, so that the operation proceeds in a semi-continuous manner.

Only certain constructions can be handled in this way; but where this method can be employed, it proves efficient, since the goods can be passed from one reeling machine to another to obtain greater production in a given length of time.

Usually the fabric is taken from the kettle wet, piece by piece, and placed in a centrifugal extractor. After extracting, it is dried on a loop or tenter dryer.

With some constructions of goods, it is practicable to squeeze the fabrics through a pad, instead of extracting them, before entering them into the



Through laboratory testing we are able to supply you with the exact fibers or fiber blends you specify. Our close contacts with our own and our contracted mills allow us to inaugurate quality control and correct classification at the source of supply.

We have on hand a wide variety of fibers—cotton; cotton and rayon blends; rayon, aralac and cotton blends; and assorted rayon scraps. We can furnish these in comber noils, card strips, spinners and rovings (machined and unmachined), colored card strips, soiled cards, and woven cuttings.

Tell us *what* you want in staple length, color, strength, percentage of foreign matter, resiliency and drag and we will quote you promptly on the exact material to do the best job for you. Wire or write us today.

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dryer. Both the type of the fabric—whether cotton, worsted, or rayon—and the construction influence the method chosen for removing excess water. Certain cloths have a tendency to flatten too much in passing through squeeze rolls.

Finishing agents are sometimes added to the last rinse after dyeing, in order to soften or render more firm the hand of the cloth.

Cost of Skein Dyeing Is Almost Prohibitive

Technical Editor:

Can you give us any information on the following questions:

1. In what applications, classified by type of yarn and end product, is skein dyeing currently used by woolen manufacturers? What are the reasons for using skein dyeing in preference to other dyeing methods in these applications?

2. What is the outlook for continued volume of skein dyeing on all machines and particularly on rotary machines?

3. What improvements are likely to be made in skein-dyeing equipment? (9168)

1. Woolen hand-knitting yarns of coarse counts are usually skein dyed when the price of the knitted product is high enough to warrant such an expensive method of dyeing. If the product is not of such high price or if the size of the lot of yarn is fairly large, the wool is usually dyed in top form, since this method of dyeing is much more economical.

Although hand-knitting yarns represent a worth-while volume of wool dyeing, the major portion of dyed yarn is used for machine knitting and weaving. The lots ordinarily used for these purposes are entirely too large for dyeing by the expensive skein method.

2. The outlook for the future of skein dyeing is not encouraging for the reasons mentioned in item 1. Although the rotary machine is the principal type of machine used at present, the high labor costs of operating it are causing dyers to discard it. For example, one company once operated 60 rotary skein-dyeing machines; now it is using only one. Where possible, mills are changing over from skein dyeing to package or top dyeing.

3. Significant improvements in skein-dyeing equipment are very unlikely, since the almost prohibitive cost of operating these machines makes it seem impractical to invest money for development work.

General Chemical Research Presents

Sulfan*

Brands of STABILIZED SULFURIC ANHYDRIDE

General Chemical Company—America's pioneer with the Contact Process for manufacture of high strength sulfuric acid and oleum—makes another major contribution to Basic Chemicals for American Industry with SULFAN . . . Anhydride of Sulfuric Acid.

By perfecting new methods of stabilizing Sulfur Trioxide, General Chemical Research takes an invaluable chemical tool off the shelf of laboratory curiosities and brings it to the Process Industries as a chemical of commerce for use in a host of ways.

General Chemical offers SULFAN in three chemically equivalent forms:

Sulfan 'A' Partially Stabilized, melting at approx. 35°C;

Sulfan 'B' Completely Stabilized, melting at approx. 17°C; and

Sulfan 'C' Unstabilized.

Experimental samples and further technical information are available on request from General Chemical Company, Research and Development Division, 40 Rector Street, New York 6, N. Y.

Some Potential Uses

1. For fortification of spent oleum, making possible a ready supply of any strength oleum.
2. In benzenoid sulfonations for elimination of mixed sulfonates: meta- only or ortho- and para- derivatives only are formed.
3. For di- and poly-sulfonations of aryl compounds.
4. For direct sulfonation of aliphatics.
5. For sulfonations in the presence of a solvent, thus eliminating the removal of H_2SO_4 necessary when oleum is the agent.
6. For formation of addition compounds with amines, valuable in organic synthesis.

Sulfuric Anhydride exists in three chemically equivalent physical modifications as indicated by data below. General Chemical's stabilized product is almost entirely Gamma-Form and its partially stabilized product is largely Beta-Form.

PROPERTY	GAMMA-FORM	BETA-FORM	ALPHA-FORM
Description	Ice-Like	Asbestos-Like	Asbestos-Like
Equilibrium			
Melting Point (°C):	16.8	32.5	62.3
Density (20°C)	1.9255	—	—
Sp. Ht. (cals/gm) (20°C)	0.77	—	—
Ht. of Fusion (cals/mol)	1,800	2,900	6,200
Ht. of Sublimation (cals/mol)	11,900	13,000	16,300
Ht. of Dilution (cals/mol)	40,340	—	—
Vapor Pressure (mm.)			
0°C	45	32	5.8
25	433	344	73
50	950	950	450
75	3,000	3,000	3,000

GENERAL CHEMICAL COMPANY

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NEUTRONYX 330

Non-Ionic • Surface-Active

DETERGENT and EMULSIFIER

with

Unusual Dispersing Action

NEUTRONYX 330 offers exceptional usefulness in detergent, emulsifying and dispersing action with the outstanding advantage of stability against hardness, electrolytes and both anionic and cationic surface-active agents. It prevents redeposit of suspended soil on fabrics and does not adsorb on any textile fibers. It is particularly useful in improving penetration and levelling of acid, acetate and direct dyes. It is in extensive use as an assistant to insure more even exhaustion of anionic and cationic hosiery finishes.

Relatively non-foaming, Neutronyx 330 is an excellent wetting agent in warm solution.

PROPERTIES

Neutronyx 330 is a reddish brown oily liquid readily miscible with water and with alcohol. It contains over 95% of the active ingredient — a polyalkyl ether condensate of fatty acids.

It is compatible with moderate concentrations of acids and alkalies and with hard water, electrolytes and both anionic and cationic surface active agents. It disperses insoluble anionic-cationic complexes. Soluble in both water and organic solvents.

It is stable to heat and has perfect stability in both normal plant use and in storage.

PERFORMANCE

Surface Tension (Dynes per Cm.)
DuNouy Tensiometer (25°C.)

Concentration	Dynes
0.5%	34.5
0.1%	35.2
0.01%	35.4

Wetting Action (Draves Test)

Concentration	25°C.	60°C.
0.5%	215 Sec.	27 Sec.
0.2%	5 Min. Plus	56 Sec.
0.05%	"	170 Sec.

Detergency
Hunter Reflectometer with standard soiled cotton before and after washing.

Concentration	Per Cent
0.1%	13.5
0.05%	11.9

With addition of 0.25% TSPP

0.1%	22.6
0.05%	15.0

OTHER USES

- Auxiliary Detergent for Hard Water Conditions
- Dispersing and Solubilizing Agent for Acetate Colors
- Scouring Assistant for Rayon and Acetate
- Assistant in Chlorination of Wool in Shrink-proofing
- Dispersing Agent for Pigments in Organic Vehicles

We will be glad to send complete data.

onyx CHEMICALS FOR DYEING AND FINISHING

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For Export: Onyx International Jersey City 2, N. J.

Williams Unit

(*Continued from page 147*)

cases, the use of such a bath may be more advisable than the use of a pad in a similar manner, because of the greater contact of cloth with the developing liquor before the nip and the utilization of a very small working volume.

There are many operations in which the immersion in the average pad or box is not sufficient to produce absorption before the cloth is squeezed at the nip. An example of this is in the application of wax emulsions to heavy fabrics, such as ducks, on which it is necessary to deposit a certain per cent of wax. Such an operation requires the maximum of contact of cloth with the liquor before the squeezing action takes place. This holds true with regard to many chemical treatments. Poorly absorbent materials should be thoroughly saturated before squeezing, and this can be accomplished best, with a maximum yardage of contact and a minimum quantity of liquor, by using a Williams unit.

Investigations are being made with respect to the continuous dyeing of woolen fabrics on these machines.

WASHING AND SCOURING. In addition to using Williams units for the application of dyestuffs, they can be used to advantage in the removal of chemicals and in operations such as washing, scouring, etc. Many installations are now being operated very efficiently by using these units following a mercerizing range. Figures available from plants that have made these installations confirm their success in this field. The units have replaced to advantage many of the older forms of caustic recuperators and washers.

In taking a check of over a year's operations regarding the effectiveness of these units as washers, the following was found:

One unit has the efficiency in caustic removal from cotton fabrics equal to that of three average open boxes.

A number of installations using two units in range have replaced to a more efficient degree standard 5-compartment washers.

The removal of caustic from materials varies to a considerable degree in direct relation to the construction of the fabric. Tests made on 2.00-yd. twills running at speeds of 90 to 100 yd. per min., and containing from 1.5% to 5% caustic, showed that the first unit removed 75 to 80% of total caustic and the second unit removed 60 to 70% of what was left after the first operation. One plant reported an average of 90% caustic removal,

FIRE PREVENTION

for 76%
OF ALL
OPENER AND
PICKER FIRES

DINGS TEXTILE MAGNETS

Insurance records prove that over three-fourths of all fires in opener-picker rooms are caused by tramp iron . . . Performance records prove that mills using Dings Textile Magnets have effectively eliminated this hazardous source of fire. Powerful Dings Vertical Plate Magnets stop tramp iron in its tracks—get it out of cotton before it can start a disastrous fire—before it damages machinery and causes costly shutdowns.

It takes strength—electro-magnetic strength—to insure completely effective tramp iron removal. That's why Dings, builders of both electro magnets and Alnico magnets, designed the Dings Textile Magnet—an electro-magnetic separator with the power and the range to do a really positive removal job—with no diminishing of magnetic strength after a few months.

Get full details today on Dings Textile Magnets to handle any capacity in your mill. They are simple to install, require minimum attention, and cost only a few cents a day to operate. Write Dings.

DINGS MAGNETIC SEPARATOR CO.
4700 W. McGeogh Avenue • Milwaukee 14, Wisconsin

Dings
"HIGH INTENSITY"

"Separation Headquarters Since 1899"

FACTORY MUTUAL FM APPROVED

How TO PIECE CARBONIZE WITH CONTROLLED TENSION AND WITH NO LOSS IN WIDTH OR WEIGHT—AT HIGH SPEEDS

We cordially invite you to write for the new brochure pictured on this page. It will tell you how Hunter offers any mill the newest advantages in carbonizing equipment with performance pre-tested and production guaranteed and cost determined before you install the equipment.

It will tell you how this modern unit, consisting of a lead lined Acid Tank, Pneumatic Heavy Duty Squeeze Rolls and Carbonizing Dryer, operates as a synchronized unit with patented range drive.

It describes in complete detail the new Hunter Patented Range Drive which affords you these important aids to the salability of your fabric:

a. Uniform tension on goods throughout the unit.

b. Complete elimination of impaired tensile strength.

c. Complete protection against streakiness and marked surfaces on face finish goods.

d. No tendering of cloth in seams or anywhere in the piece.

e. Absolute guarantee against building up of slackness and undue tension in the unit.

This new 8-page bulletin will be a valuable addition to your technical files. A request from you on your letterhead will bring the brochure by return mail with absolutely no obligation on your part.

JAMES HUNTER MACHINE CO.
NORTH ADAMS, MASSACHUSETTS, U.S.A.
FOUNDED 1847

MANUFACTURERS' BULLETINS

***READERS** may secure copies of literature reviewed on these pages by using the post cards below. Fill out COMPLETELY one coupon for each piece wanted.*

Free FOR THE ASKING

1. Multi-V belts and Magic Grip sheaves are described in Catalog Sections 2170 and 2175 published by B. F. Goodrich Co. The belt leaflet describes the various types which the company manufactures; the one on sheaves describes how they work and includes a table showing pitch diameters and bushing sizes of all sheaves carried in stock.

2. Aveco tricot-knitting machines are described and featured in a 4-page folder published by Aveco, Inc. The features of the machine are illustrated with photographs and captions, and dimensional drawings of the machine are given.

3. "A New Industrial Catalog Service for South America" is the title of an 8-page booklet presenting detailed information about new catalogs to be distributed in ten South American Countries and published by Sweet's Catalog Service.

4. Air travel in the United States and abroad is the subject of a 20-page booklet published by American Airlines. The booklet describes the services rendered by American Airlines and presents a digest of what a visitor may expect in European countries in the way of food, rationing, hotel accommodations, local transportation, customs requirements, and currency values.

5. Paint spray hose is described in Catalog Section 4280 published by B. F. Goodrich Co. Essential data on the construction of the hose are given, as well as its applications in handling oil, paints, lacquers, varnish thinners, and synthetic enamels.

6. Gearshift drives for industrial machines are described and illustrated in a 6-page bulletin issued by Lima Electric Motor Co. The bulletin reviews the application of these drives to production equipment requiring selective speeds and illustrates the interior of the drive by means of a sectional view.

7. Infrared heaters for industrial processes is the subject of a 12-page booklet published by Fostoria Pressed Steel Corp.

8. Corrosion-resisting heat exchangers of an entirely new design are described in Bulletin 1610, published by Duriron Co., Inc. The bulletin contains complete construction details and dimensions as well as installation and operating instructions.

9. Warpers and warper equipment and accessories are described and illustrated in a catalog published by Allen Co. Wooden beam heads, high-speed warper beams, loom-beam barrels, cloth rolls, narrow - fabric beams, intermediate stands, and combs are among the equipment described.

10. In-plant feeding of employees is discussed from the standpoint of worker cooperation, worker absenteeism, accident and injury rates, labor turnover, and manufacturing costs in a booklet published by Crotty Bros., Inc.

11. "Practical Information on Dust Collection" is the title of a 16-page booklet published by Whiting Corp. The booklet covers both general and technical aspects of the subject; discusses hoods, orifice loss, pipe resistance, fans, air pressures, and many other pertinent subjects.

12. "Automatic Control System for Continuous Bleaching" is the title of a 4-page bulletin published by Taylor Instrument Companies. Schematic drawings illustrate the application of instruments to each phase of the continuous-bleaching operation.

13. "Twenty-five Years of Textile Resin Finishing," a review of progress in textile-resin finishes over the last 25 yr. has been published by American Cyanamid Co. The bulletin reviews the history of resin finishes, briefly describes the basic applications that have been made in the past, and outlines present development and future probable types and uses for textile resins. Also included is a bibliography for the use of those wishing to continue their reading beyond, the scope of the bulletin.

14. Nine glycol ethers are described in a 24-page booklet published by Carbide and Carbon Chemicals Corp. The bulletin presents in detail the important properties, specifications, uses, and constant-boiling mixtures of the glycol ethers. In chart form, it gives such information as physical constants, comparative evaporation rates and various solubilities.

Instructions for use of post cards on other side

Write in box number of item describing one catalog wanted. ☐
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Good until September, 1947
TEXTILE WORLD, New York 18, N. Y. (May, 1947)

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TEXTILE WORLD
330 West 42nd St.
New York 18, N. Y.

McGraw-Hill Publishing Co., Inc.

15. Fire fighting and methods of stopping incipient fires at the start are discussed in a 24-page booklet published by American-LaFrance-Foamite Corp. The book is of educational nature and not only describes, but illustrates, the proper use of the various types of fire-fighting devices for the class of fire for which each is intended

16. "The Quantitative Analysis of Cotton-Viscose Rayon Mixtures" is the title of a reprint issued by Textile Chemical Div., Dexter Chemical Corp. Previous reprints in the series include: Luster Determination with a Photoelectric Photometer, Variations in the Removal of Pectic Substances from Cotton Yarn in the Mercerization Process, Mercerization and Dypenol, A Study of the Mercerization Process, New Developments in Permanent Cellulose Finishes, Methods for the Study and Control of Mercerization, and A Test for Mercerization in the Presence of Dyes.

17. Increased volume by proper packaging is the subject of a 16-page folder published by Old Dominion Box Co., Inc. The folder describes the advantages of proper product research, merchandising and creative design in achieving a complete packaging service.

18. Heddles, heddle frames, and cotton harness are described in an eight-page catalog published by Emmons Loom Harness Co. Plastic sheaves, reeds, and frame hardware are also describes and illustrated in the catalog.

19. A new-construction guide, consisting of an illustrated booklet published by Stonhard Co., contains useful information on construction of foundations and basements, the laying of various types of floors, surfacing of interior- and exterior-wall surfaces, protecting exposed structural members, and points out many unusual conditions affecting the durability of finished construction.

20. "New Protection Against Airborne Diseases" is the title of a folder on commercial germicidal units published by Lustra Corp. of America. Illustrated are two new types of Protect-O-Ray wall units for upper-air disinfection, one overhead unit combining germicidal radiation with fluorescent lighting, one plastic-housed portable unit for localized applications, and two open-type portable units for individual room sterilization.

21. Electronically controlled voltage regulators, their principles of operation and technical specifications, are described in a new catalog published by Sorensen & Co. The catalog is illustrated with performance curves and pictures of the various models available.

22. "Control for Spreader Stokers" is the title of Bulletin 1022 issued by Bailey Meter Co. The four-page bulletin illustrates and explains the operation of standardized component parts of the control system; it also shows chart records illustrating the performanmce of a complete system with automatic fuel-air ratio control.

23. Selling a safety attitude to employees is one of the subjects discussed in the December issue of American Mutual Magazine. The article describes methods utilized to reduce the accident rate of a manufacturing company by more than 60%.

24. Forced-circulation evaporators are the subject of an eight-page two-color bulletin issued by Swenson Evaporator Co. The booklet is illustrated with photographs and drawings and shows not only principles of operation of the evaporators but shows installations in different plants with typical flow charts.

25. Steel strapping on bales and boxes is the subject of a four-page folder published by Acme Steel Co. Photographs clearly illustrate the baling method, and detailed instructions are given.

26. Corrosion-proofing metal and masonry surfaces with protective coatings are described in a folder published by Prufcoat Laboratories, Inc. The application specifications give detailed information concerning the preparation of the metal and masonry surfaces as well as the application of protective coatings.

27. "The Dyeometer: An Instrument for Studying Color Reactions" is the title of a reprint, Technical Bulletin No. 792, published by Calco Chemical Div., American Cyanamid Co.

28. "Xylene Technical Review," a 32-page booklet published by Oronite Chemical Co., is a compilation of the chemical and physical properties of the xylene isomers together with an extensive bibliography.

29. Fluorescent and incadescent lighting equipment is described in Catalog 44-A published by Edwin F. Guth Co. The catalog contains useful information on lighting design, accurate light-engineering data, and complete details and specifications on all products listed.

30. Induction motors are the subject of two bulletins published by Reliance Electric and Engineering Co. Bulletin C-118 covers protected (open-type) frame sizes 203 to 326, with horsepower ratings from ½ to 20, 600 to 3600 r.p.m.; Bulletin C-125 deals with squirrel-cage frame sizes 224 to 326, totally enclosed, fan-cooled motors. Both bulletins describe Series C motors.

31. Loudspeakers, reflex projectors, driver units, and radio horns are described and illustrated in a 24-page brochure published by University Loud Speakers, Inc.

32. Protective coatings for control of corrosion and contamination are described in an 8-page bulletin issued by Amercoat Division, American Pipe & Construction Co. Characteristics and properties of plastic coatings are listed; and information on selecting proper coating, preparation of surface, and application methods is provided.

TO GET MORE INFORMATION

1. Fill out completely one space (name, title, company, address, and item number) for each bulletin wanted. Put only one number in each square.

2. Use only botom card if ordering one to four pieces, both cars if ordering five to eight.

3. Detach, add postage, and

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My Name William L. Wilson

Title Overseer

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City Clearview State N. C.

TEXTILE WORLD, New York 18, N. Y.

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TEXTILE WORLD
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New York 18, N. Y.

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TEXTILE WORLD, New York 18, N. Y. (May, 1947)

What about **Aluminum** *Bobbins?*

#1 #2 #3

Are Aluminum Bobbins adaptable to *any* Textile operation? The answer is definitely "No", but there are many places or operations where, beyond any doubt, Aluminum Bobbins will serve the purpose best.

Pictured above are three Bobbins to illustrate.

#1 is a worsted yarn Twister Bobbin with Lestershire magazine feature. The yarn is also conditioned on this Bobbin.

#2 is a Spinning Bobbin for certain high strength filament yarns.

#3 in similar in usage to #1 except it is used in rayon or nylon processing.

These three Bobbins are examples of where aluminum serves the purpose best. There are many more places where similar Bobbins can serve *your* purpose better.

Any of our representatives will be able and glad to prove to you whether or not yours is such an operation.

W. S. TAYLOR, INC., 52 Vanderbilt Avenue, New York 17, N. Y.

NEW YORK SALES AGENT AND TECHNICAL SERVICE

R. B. DORMAN—1000 Peachtree St., Atlanta, Ga.

FRANK STEERE—1620 Broad St., Edgewood, Providence, R. I.

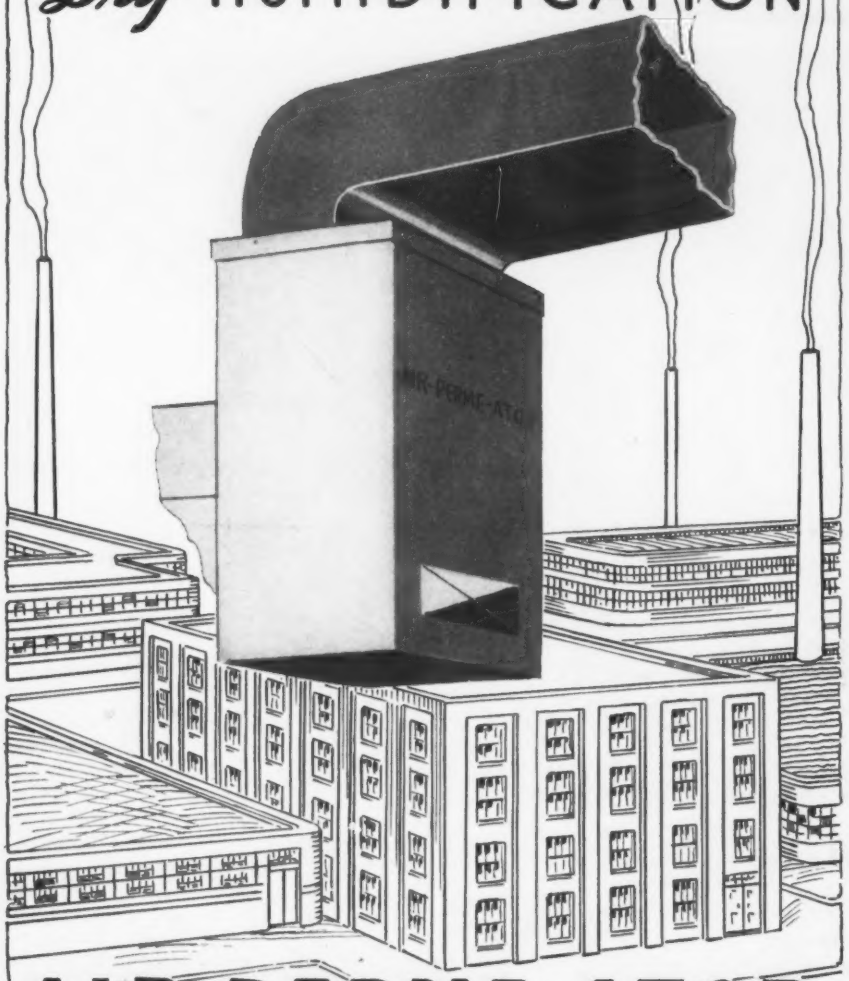
ODELL MILL SUPPLY CO., Greensboro, N. C.

GREENVILLE TEXTILE SUPPLY CO., Greenville, S. C.

LESTERSHIRE SPOOL & MFG. CO.

JOHNSON CITY, NEW YORK

THE MODERN *Unit* SYSTEM OF *Dry* HUMIDIFICATION



AIR-PERME-ATOR

"500 TIMES FINER THAN SPRAY"

The economical unit system of humidification —Air-Perme-Ator is used by scores of leading mills.

No costly central system required. Can be hooked up with existing water and electric lines. Conserves floor space.

This patented method of "Dry" humidification is highly efficient. There is no free moisture to rust machines and equipment, damage fabrics, or cause worker discomfort. Healthy, safe—cannot cause precipitation even if left running over week ends.

Write for descriptive folders illustrating installations in leading weaving, knitting and yarn mills.

AIR-PERME-ATOR MFG. CO.

300 Preakness Ave. Paterson 2, N. J.

using two units at 200° F. temperature, flowing 30 to 40 gal. of water per minute per unit.

Such installations require less space and less mechanical upkeep, permit savings in steam and power, and give a considerable decrease in fog and steam due to the small area of exposure to the atmosphere of liquor and cloth surface.

Continuous dyeing of narrow fabrics is being done at present on the units to a decided advantage over skein handling. Small units are being manufactured for this type of work. Simple mechanical continuous ranges that will process vats, naphthols, sulphurs, and direct colors show a decided advancement in this method of dyeing.

New warp-dyeing installations are in operation, using Williams units. Most of this form of color application is still being studied, but indications are that such installations will have many advantages over mechanical layouts now in operation.

The Cotton Comber

(*Continued from page* 110)

COMBER NEEDLES VITAL. There has been considerable disagreement among mill men on the use of flat needles in the top comb. One school of thought prefers the round needle because it gathers trash. However, if the round needles are seldom cleaned—as is often the case—this advantage cannot be claimed. The flat needle needs no picking, remains clean, costs more than the round needle, but outlasts its rival by a wide margin.

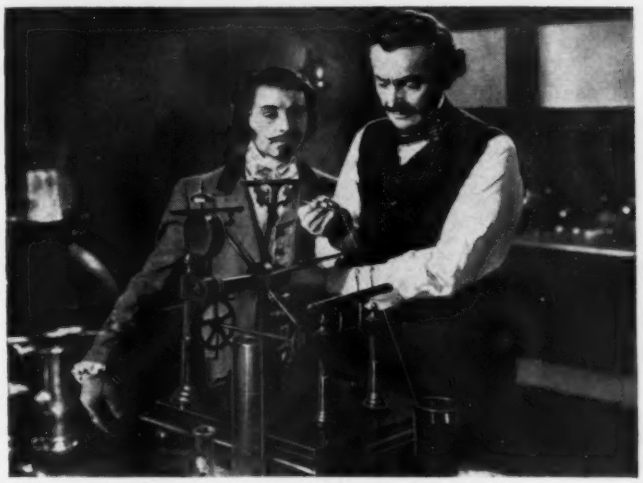
In recent years, short needles have been used by some mills in the half laps. In the technical layout shown in Fig. 2, and in any layout where 400 to 600 gr. laps are combed, the short needle known as the Warld needle does an excellent job of combing the fibers. These needles should be soldered in with half-and-half solder. Smaller in diameter than regular needles, the Warld type gives a greater number of needles per sq. in.

Regardless of the preference for needles, the comber fixer should be trained—as step number five—to give regular maintenance to those parts of the comber, such as the needles, which demand it. Good needles should be in the top comb and half lap at all times. As shown in Fig. 3, there are other vital parts of the comber which should receive the same attention.

The fans especially should have critical attention. If the fan belt slips when the comber is started, or if it runs two or three revolutions after the comber is stopped, the resulting air draft will cut the sliver. To avoid this

Rayon Reports

Prepared Monthly by American Viscose Corporation, New York, N. Y. MAY, 1947



Scene reproduced from the new Avisco Technicolor film, "Science Spins a Yarn."

New "Avisco" Technicolor Movie Depicts Science and Drama of Rayon's Growth

The beginning, growth and present-day stature of rayon... this is the story of "Science Spins a Yarn," new sound and technicolor motion picture just released by American Viscose Corporation.

Produced in Hollywood on the RKO Pathe lot by Roland Reed, "Science Spins a Yarn" provides 23 minutes of feature quality entertainment with Regis Toomey heading the top-flight cast.

Slanted primarily for school audiences, the picture illustrates the versatility of this man-made textile fiber which opened up new industries, created new jobs, and brought a wider range of fabrics into existence. The setting is a modern textile research laboratory. Flashbacks to the struggles of early rayon scientists provide chronological links in the story.

In addition to the school audiences among which the picture will have its largest circulation, a wide audience is scheduled for women's clubs, consumer groups, and AVC's 22,000 employees.

Another recent Avisco presentation is the visual unit "How Rayon Is Made." It consists of a 70-frame silent film strip, a printed commentary, a 15-minute, 16 mm. sound motion picture, and a User's Guide for the unit. While of special interest to textile students, this, as well as "Science Spins a Yarn," can be obtained for special trade showings. Simply write Dept. RR5, Consumer Relations Section, American Viscose Corporation, 350 Fifth Avenue, New York 1, N. Y.

"Avisco" Trademark Names American Viscose Products

Since inauguration of the trademark "Avisco" on April 1, products of American Viscose Corporation incorporate the word. A list of the products follows:

Viscose
Avisco viscose rayon yarn
Avisco bright viscose rayon yarn
Avisco semi-dull viscose rayon yarn
Avisco dull viscose rayon yarn
Avisco high-strength viscose rayon yarn
Avisco medium-strength viscose rayon yarn
Avisco viscose rayon tire yarn
Avisco viscose rayon tire fabric
Avisco viscose rayon staple
Avisco bright viscose rayon staple
Avisco dull viscose rayon staple
Avisco high-strength viscose rayon staple
Avisco crimped viscose rayon staple
Avisco viscose rayon carpet staple
Avisco viscose rayon tow

Acetate
Avisco acetate rayon yarn
Avisco bright acetate rayon yarn
Avisco dull acetate rayon yarn
Avisco acetate rayon staple
Avisco bright acetate rayon staple
Avisco dull acetate rayon staple
Avisco acetate rayon tow

Vinyon*
Avisco Vinyon* resin yarn
Avisco high-strength Vinyon* resin yarn
Avisco medium-strength Vinyon* resin yarn
Avisco Vinyon* resin staple
Avisco Vinyon* resin tow

*Trademark C. & C.C.C.

RAYON 20 YEARS AGO

A rayon knitwear manufacturer, whose plant ran full time last year, reports not a single garment returned to him for any reason whatsoever.

Three quarters of all lining materials for men's and women's clothing in England now contain rayon, a British textile authority states.

A leading women's wear manufacturer has recently exhibited a coat made of rayon that resembles soft crocodile leather.

MAKE USE OF *Avisco* 4-PLY SERVICE

To encourage continued improvement in rayon fabrics, American Viscose Corporation conducts research and offers technical service in these fields:

1 FIBER RESEARCH
2 FABRIC DESIGN
3 FABRIC PRODUCTION
4 FABRIC FINISHING

AMERICAN VISCOSE CORPORATION

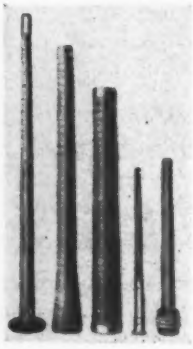
America's largest producer of rayon

Offices: 350 Fifth Avenue, New York 1, N.Y.; Charlotte, N. C.; Cleveland, Ohio; Philadelphia, Pa.; Providence, R. I.; Washington, D. C.; Wilmington, Del.

A-P-T- YARN CARRIERS

From Material to Design -
Built to Industry Requirements

IF YOU HAVE ENCOUNTERED damaged fibres in your mill due to chipped or splintered bobbins, change to A.P.T. Yarn Carriers now. The tubes, made of laminated paper, impregnated for moisture resistance and hardened by baking, NEVER chip or splinter. You'll welcome the smooth performance of A.P.T. Yarn Carriers once you try them and you'll be glad to say "Goodbye, Mr. Chips" to old-fashioned bobbins.



The precise construction of A.P.T. Yarn Carriers, from their "built-around-the-spindle" beginning, means perfect balance on the spindle, perfect spindle cling, resistance to distortion, and free, but controlled delivery. The same tough materials that eliminate chipping and splinters make these tubes highly resistant to splitting.

Other industry requirements for the perfect yarn carrier which A.P.T. Products satisfy are: Light weight, great strength, and low ultimate cost.

Give these superior carriers a chance to improve the quality of your production and to reduce costs. They are adaptable to the spinning, twisting or weaving of all types of fibres.

AMERICAN PAPER TUBE COMPANY

ESTABLISHED 1898 • WOONSOCKET, RHODE ISLAND

SALES OFFICES—GREENVILLE, S. C., NEW YORK, CHICAGO

defect, some mills are switching to individual drives using V-belts or direct fan-to-motor drives.

OIL IS KEY. Oil plays a major role in the performance of a comber and deserves separate discussion. There are oils which contain soap, alkali, and fats, some with paraffin bases, others with graphite bases, and so on. While no general rule can be stated which will show the overseer of combing just what particular oil to buy for the combers, careful study of the oil ingredients is strongly recommended. Oils which leave black residue on comber parts are to be avoided.

A number of semi-oilless top-roll bearings are on the market today for comber and drawing rolls. These bearings require little oil and are efficient if the bearing fit is not too tight at the time of installation. Since these bearings are made from porous metals, they should have a bit of tolerance when placed upon the various shafts. Mills are urged to obtain the services of bearing and lubricating engineers who will help them to solve the various lubrication problems of the comber.

The oiling operation should be a most careful one. Too little oil results in undue wear of the part. But too much oil will saturate the bottom and top rolls, will result in wrap-ups and black work. Especial care should be taken in the upkeep of needles on the top comb and half lap. The cause of most needle replacement is a faulty knock-off motion. The wrap-up gets so large on the roll that it breaks the wire in the top comb and half lap. In some cases, of course, the top comb may be set too deeply in the work; but if the oiler avoids wrap-ups, most cases of needle replacement will be avoided.

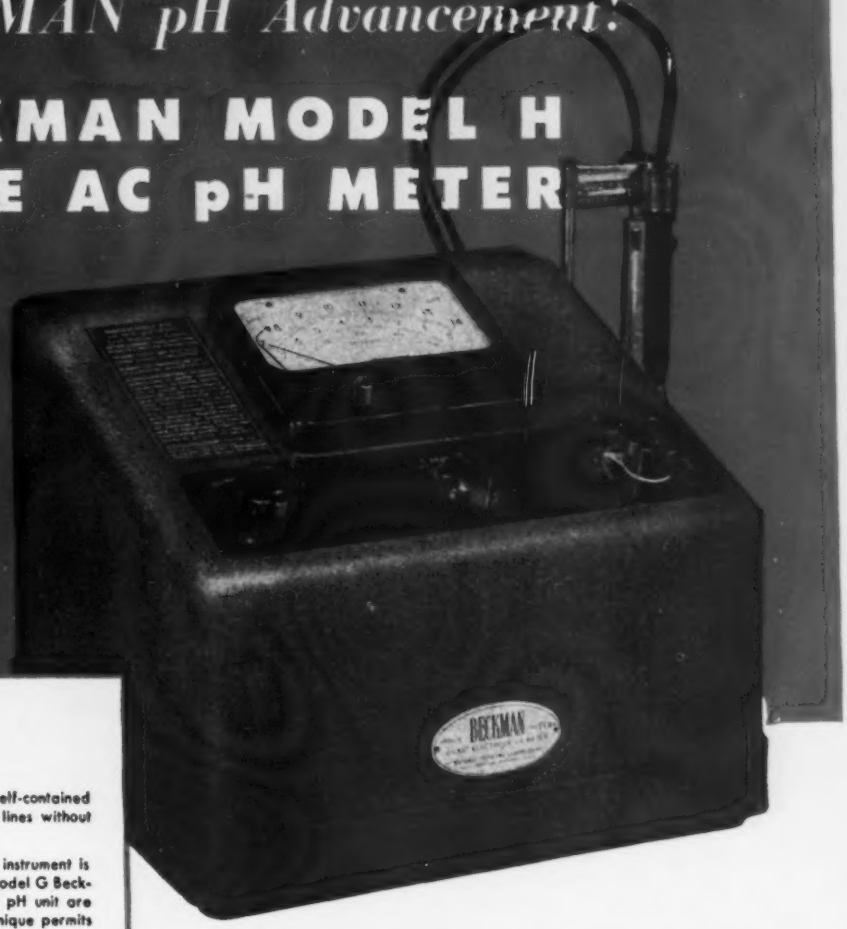
COMBER CLEANLINESS. Machine cleaning is also an important part of comber maintenance. In this respect, the combing machine is the nearest thing to a knitting machine that can be found in the average cotton mill. Its many fast-moving and minutely timed parts must be free from trash and lint accumulations. The overseer must schedule his machine cleaning, and the fixer should enforce the schedule.

WHY COMBER SETTINGS. As a final step in the return to quality, the combed-yarn mill should be certain that all comber fixers know the "why" of comber settings. This point has already been stated, and it is emphasized as a separate function of a quality program because the neps and gouts in yarn may be increased rather than decreased if the comber fixer does not thoroughly understand why specific settings are desired for the comber.

For example, the fixer may set the

Another BECKMAN pH Advancement!

THE BECKMAN MODEL H PORTABLE AC pH METER



Full AC Operation: The Model H is completely self-contained and operates directly from standard 115 volt AC lines without accessory equipment of any kind.

High Accuracy: The accuracy of the Model H instrument is equivalent to that of the well known Model M and Model G Beckman pH Meters. For rapid work, accuracies of 0.1 pH unit are easily obtained, and more careful attention to technique permits determinations to 0.02 pH units. Such high accuracy has never before been available in a compact AC pH Meter.

Single-Point Buffer Calibrations: With the Beckman Model H it is not necessary to calibrate with two buffer solutions. The Model H incorporates a unique electronic circuit that permits accurate readings regardless of variations in resistance of the glass electrodes due to aging or due to electrode temperature changes after calibrations. This important advantage is accomplished without need for multiple buffer calibrations.

Maximum Temperature Stability: After a short warm-up period, subsequent change in calibration of the instrument due to temperature effects is very small—only about 0.1 pH unit in the first two hours and 0.05 unit subsequently. When maximum accuracy is required, this change may be instantly checked and corrected *without rechecking against buffer solution.*

Full Temperature Compensation, 0 to 100° C: A built-in temperature compensator covering the full range of 0° to 100° C can be set to compensate automatically the effect of temperature changes on the EMF of the glass electrode over the entire pH range of the instrument. Thus, the pH at the electrode temperature may be read directly from the dial without calculation or corrections.

Direct Millivolt Scale: The Model H Meter is graduated in millivolts as well as pH units, and a range switch permits measuring directly either in millivolts or pH at will.

Rugged Lightweight Construction: The Model H is housed in a cast aluminum case with an attractive dark gray wrinkle finish. The instrument weighs approximately 10 pounds, complete, and is easily carried. For maximum operating convenience the meter dial and all controls are mounted on a sloping panel.

The First Portable AC pH Meter with DC Accuracy, Simplicity and Dependability

NO LONGER need you sacrifice accuracy and dependability to get the convenience of AC operation in a portable pH Meter. For now the same organization that pioneered modern glass electrode pH equipment, and has pioneered every major advancement in modern pH instrumentation and methods, brings another important development...a portable pH Meter that operates from standard AC current *without sacrificing any of the accuracy and dependability that are so essential in modern pH applications.*

This new instrument – the Beckman Model H pH Meter – has been in development over a long period of time. Many different designs and circuits were tested and rejected before an instrument was perfected that meets the rigid Beckman standards of excellence. The Model H Meter is not just an "AC" pH Meter. It is an instrument embodying advancements in circuit design that insure the same high operating efficiency and accuracy that have made Beckman pH Equipment standard throughout the world.

A few of the many unique features incorporated into the Beckman Model H pH Meter are outlined at right. Contact your nearest distributor of Beckman pH Instruments for further details...or write direct. *Beckman Instruments, National Technical Laboratories, South Pasadena 12, Calif.*

BECKMAN **INSTRUMENTS CONTROL MODERN INDUSTRIES**

danger!-

ONE STEP AWAY!

For those who work in slashing, carding, weaving rooms, as well as in spinning rooms where hundreds of spindles whirl at tremendous speed, *good* footing is of the utmost importance. Floors that become soaked and slippery with lubricating oil are an invitation to disaster—a disaster that can be prevented by the application of SOL-SPEEDI-DRI over the danger area.

SOL-SPEEDI-DRI is a white, granular absorbent for all liquids. It works like magic. Spread over floors made slippery and dangerous by oil drippings, SOL-SPEEDI-DRI becomes a slip-proof carpet that soaks up oil and other liquids as a blotter soaks up ink. SOL-SPEEDI-DRI helps to protect waste material from oil and grease stains yet does not harm the fly and can be easily carded. SOL-SPEEDI-DRI also reduces the danger of fire starting from oil-soaked waste.

Get the full story of SOL-SPEEDI-DRI. Write for folder that tells you how SOL-SPEEDI-DRI can cut accident rates and fire hazards in your mill, improve employee morale, and increase production.

SOL·SPEEDI·DRI

ABSORBENT FOR ALL LIQUIDS

Safety & Maintenance Co., Inc., No. 1 Wall Street, New York 5, N. Y.

cushion plate on a Nasmith comber at 0.0022 in. from the half lap. As a result, the sliver appears good and clean. Believing that he can set the cushion plate closer and make the sliver even more clean, the fixer sets it closer and closer. With each closer setting, an increase in fine neps will be detected in the sliver. Such an occurrence is difficult to explain. Yet it is a fact that comber settings can be set so closely that the machine manufactures neps and defeats the purpose of the process.

Screen-Printing Plant

(*Continued from page* 107)

usual steam pressure in service runs between 10 and 20 lb. per sq. in. The tables were manufactured by Print Tables & Equipment Corp., New York. The steam-heated tables are reported to give finer registration and sharper printing than cold tables. The maximum temperature attained on the work runs normally between 95 and 98° F. The upper portion of the table construction is a build up of Transite, felt, permanent gray cloth, and a back-gray cloth.

Cloth to be screen printed is usually pinned to the table top and is then printed by hand application of the screen. In printing, the operator works down the length of the table, printing alternate blocks of cloth in order to allow the printed sections to dry before placing the screens on the intermediate sections. Any number of colors can be printed. Aisle widths are adequate for free back-and-forth movement of operators.

Screens are usually designed by artists retained by the converters since styling is a most important factor of the business. Screens are generally 40 in. wide and 43 in. long. Screen printing is not a mass-production undertaking as is roller printing where a far greater output per day is obtained through repetition on a vast scale of designs which do not have to be so individualized. Screens may be retained at the plant for further orders or returned to the customer as desired.

CONTINUOUS FINISHING PROCESS. After printing, the cloth is suspended above the tables for preliminary drying before transfer to winding and steamer equipment. It is usually hung on wooden rods. These bars extend across the table width and are supported by wire loops hung from a messenger wire.

The printing section of the plant, by far the greater portion of its working area, is illuminated to an intensity of about 40 foot-candles by Westing-

LOWEST NET ROLL COVERING COST OBTAINABLE !

8 ADDITIONAL REASONS WHY YOU SHOULD USE DAYCOS

Large reduction of ends down.
More foreign elements removed from yarn.
Specially compounded for uniform wear, lengthening service life.
Equally effective for special types of synthetic and synthetic blends of yarn.
Not affected by temperature changes.
Oil resisting and static-free.
No grooving—less ends down.
Easy to apply.

Accurate, in-the-mill, accounting records have proved that the cost-per-hour of operation with Dayco Roll Coverings is definitely less. Whether you use flat or revolving cleaners, whether eyebrowing is a problem or not, there is a Dayco specially engineered for your frames . . . designed to give greater uniformity of yarn and increased production. Dayco Roll Coverings do this because they are engineered with correct cushion, exactly the right coefficient of friction and are unaffected by temperature extremes. Their surface is tough—never grooves, hollows out, flattens or distorts. Daycos are static-free and lapping-up is practically unknown.

Let us prove these specially engineered coverings can help raise your quality standards at the lowest net roll covering cost. Write today to Dayton Rubber, Dayton, Ohio, or

TEXTILE PRODUCTS DIVISION, DAYTON RUBBER
Main Sales Office: Woodside Bldg., Greenville, S. C.
Factory: Waynesville, N. C.

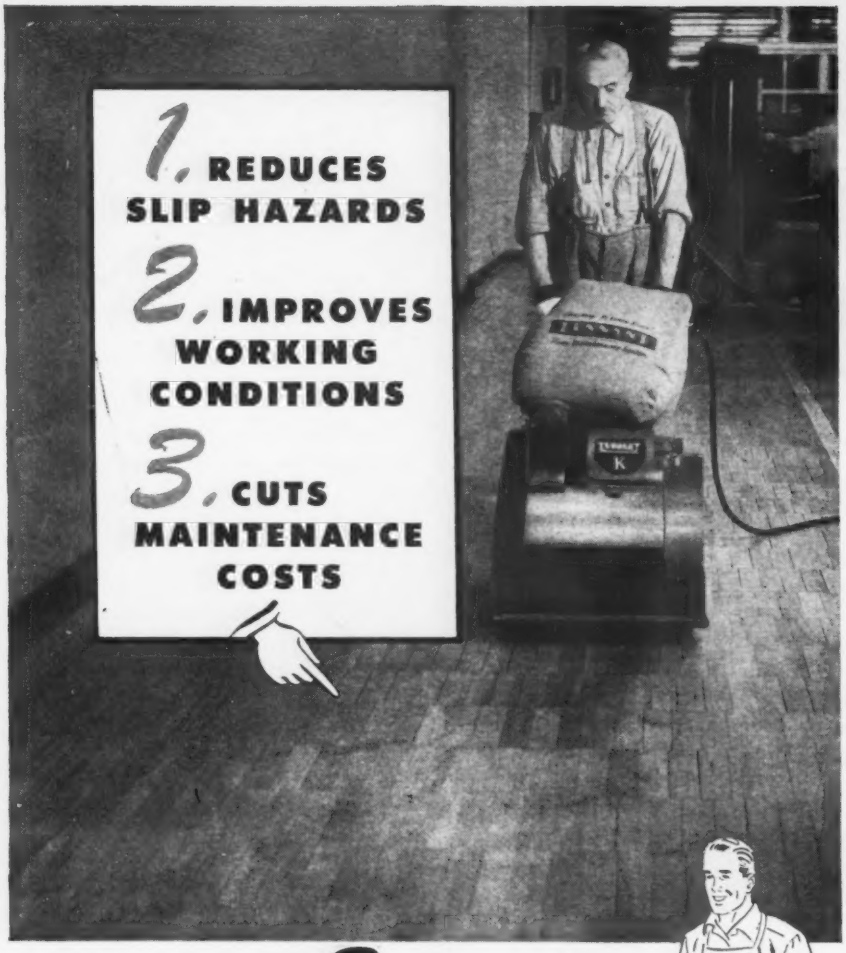
THESE *Mill Proved* PRODUCTS WILL SAVE YOU TIME, MONEY AND MATERIALS

BOX LOOM PICKERS • BOX LOOM PICKER BUMPERS • CONE BASE PADS • FROG AND LOOM BUMPERS • HOLD-UP STRAPS • LONG DRAFT APRONS • LOOP PICKERS • LUG STRAPS • ROLL COVERINGS • RUB APRONS • SLASHER ROLLS • TAKE-UP ROLL COVERING • TEMPLE ROLL TUBING • VIBRATION DAMPENERS • WOOLEN AND WORSTED COTS

Dayton Rubber

THE MARK OF TECHNICAL EXCELLENCE IN NATURAL AND SYNTHETIC RUBBER

Waynesville, N. C. plant, devoted exclusively to manufacturing textile products designed to help you produce finer textiles more economically.



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TENNANT FLOOR MAINTENANCE SYSTEM

Watch how quickly workers respond in ANY mill to safe... bright... *dry-cleaned* floors—and you'll see why the TENNANT System is so popular today. It makes your wood floors safer, brighter and *better* to work on... helps boost morale and cuts down on accidents. Yet it costs you *less!*

RESTORES "life" to your floors. Gets rid of dark, rough, oil-soaked top fibers; leaves floor bright, smooth.

HARDENS surface to resist wear. Special penetrating seal fills, binds, hardens wood fibers. Prolongs floor life, resists soilage and wear.

DRY CLEANS, eliminates scrubbing. A fast, one-man job... picks up dirt at same time. Keeps floor DRY, bright, non-slippery. No water or chemicals.

Write Today! Ask for a Tennant representative to inspect your floors. He'll give you FACTS about modern, mechanized floor maintenance . . . and what it offers your mill.

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The way to finer floors
TENNANT
Floor Maintenance System

ESTABLISHED 1870

PAINTS OVER OIL; DRIES IN *30 minutes!*

Tennant 201 Oil Cover Paint masks dark oily areas like magic . . . you just paint it on. Flows easily; dries fast. Ideal for use under looms, for painting machines, etc. Special lacquer base; easy to keep clean. All standard colors.

house daylight-and-white tubular lamps made up in pairs, spaced in reflectors 10 ft. apart, and located 9 ft. 6 in. above the working plane. The lighting installation was made by Chace Electric, Fall River, Mass.

From the drying section above the tables, the cloth is mechanically transferred to batching equipment at the south end of the print room and is wound in the form of spools. On the spools, cloth layers are separated by layers of paper. The printed fabric is then hung on a movable rack which is rolled into a Somerset Engineering Co. steamer having a capacity of 100 pieces, or about 7,000 yd. of 72-in. cloth. Here the fabric is normally treated with steam for from 5 to 90 min., the steam pressure running in the vicinity of 1 to 10 lb. per sq. in. The steaming process varies somewhat with different types of cloth and different color applications. After the steaming, the paper separators are removed in a stripping machine and, to remove the gum, the cloth is fed into a multiple-tank Somerset washer having a capacity of 60 yd. per min. The steamer and washer allow cloth to be handled in large batches; and, after washing, the cloth is subjected to centrifugal motion in an extractor which has a capacity of about 144 pieces per hour.

The cloth then passes through a Proctor & Schwartz dryer and is routed to a Winsor & Jerauld tenter frame where it is stretched to proper permanent width. At the end of the tenter frame, the finished cloth is taken off and prepared for shipment.

In the next few months, the plant expects to install equipment to provide for a complete change of air every 8 min. in order to insure suitable control of temperature and humidity. As an illustration of the steam-piping installation in the plant, each printing table is equipped with about 1,000 ft. of 1¼-in. steam piping, well sectionalized as to valves.

Electrical energy is purchased from the Fall River Electric Light Co. The power requirements are, in general, relatively small; most of the motor drives of the auxiliary equipment are rated in the range of 1 to 3 hp. About 224 fluorescent lighting units serve the print room.

It is expected that, as time passes, the handling of cloth will be further taken over by mechanical means at various steps in the production cycle. The plant is still undergoing an evolution derpite its layout for straight-line production; and the management is research-minded while fully aware of the importance of carrying on operations on a thoroughly commercial basis.

Anyone CAN LOAD AND UNLOAD THE ZEPHYR HYDRAXTOR

SO SIMPLE TO OPERATE! REQUIRES LITTLE EFFORT!

- ✓NO SPECIAL TRUCKS
- ✓NO DANGER OF MOVING PARTS
- ✓NO VIBRATION
- ✓NO BALANCING
- ✓NO RIPS AND TEARS
- ✓NO HEAVY POWER REQUIREMENTS
- ✓NO BOLTING OR FOUNDATION NECESSARY

Complete Operating Cycle is Only 6 to 12 Minutes — Including Loading and Unloading — Depending Upon Work Extracted

No other Extractor Compares with the ZEPHYR HYDRAXTOR

The HYDRAXTOR operates on a principle which is the direct opposite of centrifugal extraction. It extracts moisture from the goods by *gentle squeezing*—the mechanical counterpart of squeezing by hand—thus making it possible for the most delicate fabrics to be extracted without fear of damage and without setting wrinkles. The HYDRAXTOR is adaptable for any type of extracting in any plant. It is noiseless, vibrationless, never needs balancing. It produces more work per hour, based on same degree of moisture extraction, than any other type of extractor—*irrespective of size or price!*

Note

If you want to see the ZEPHYR *HYDRAXTOR* in operation, write us today for name of nearest plant.

Write for Descriptive Literature!

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LAUNDRY MACHINERY COMPANY
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212 EAST ERIE STREET, CHICAGO 11, ILLINOIS

EVICTION NOTICE TO *Spiders*

WHEN Crescent's electric PALLETIER moves into your warehouse, spiders move out. Way up where the cobwebs begin, that's where you'll find those extra square feet of storage space you've been looking for. And it's all free! You'll be stacking loads (mounted on pallets) high above the floor—neatly, easily, accurately, safely.

Low in initial cost, the PALLETIER quickly pays for itself by permitting you to utilize more of your present space . . . saves manpower . . . reduces terminal time for loading and unloading railroad cars, highway trucks and planes.

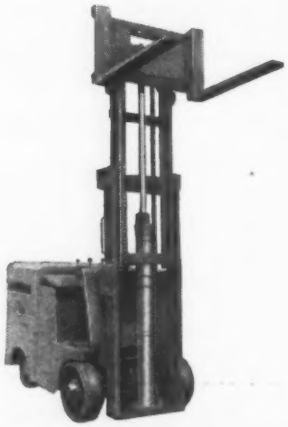
Send for full descriptive literature today.

CRESCENT TRUCK COMPANY
1145 Willow St. • Lebanon, Pa.
Member Electrical Industrial Truck Association

PALLETIER ADVANTAGES

- Operator spots and tiers without stirring from seat.
- All control levers at driver's fingertips.
- Full magnetic control protects against forced acceleration.
- Inspections and adjustments simplified by easy accessibility to all mechanisms.
- Minimum maintenance costs.

This is the truck to take loads off your mind.



ELECTRIC Crescent PALLETIER

Spinning Technology

(*Continued from page 157*)

lubricate twister rings. In the written answers to this question, five mills indicated a preference for either double-groove or multi-groove rings, while two mills stated that they prefer lubricated plain rings.

Both double-groove and plain rings are used at the Milstead Plant of Callaway Mills, it was reported. The grooved rings run cooler because of the reserve of grease in the grooves. This cooler running results in less traveler drag and longer traveler and ring life. The rings are lubricated with grease at the beginning of each doff, which varies from 45 min. to 8 hr., according to the yarn number.

Most of the rings used at Bibb Mfg. Co., Columbus, Ga., are double-groove rings, it was reported from the floor. The rings were formerly lubricated with grease, but oil is now used. At the beginning of each doff, the rings are wiped all around with a thin, clear oil. This type of oil lubricates the rings sufficiently for cool running, aids in keeping the frames and floor clean, and does not ruin so much yarn as does grease. Lubrication costs are also reduced.

Multi-groove rings are used at Martha Mills, Thomaston, Ga., T. R. Scott, general superintendent, reported. Satisfactory performance has been obtained from these rings lubricated by a wick system.

Financing in Textile Mills

(*Continued from page 111*)

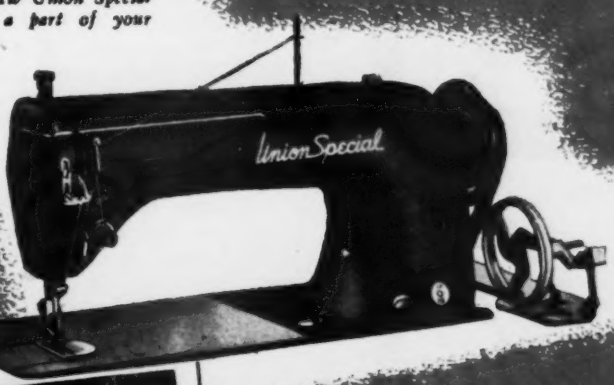
ment differs just as their sales and income vary from season to season.

Sufficient time must be allowed to let the new equipment help pay for itself and it is possible to work out an equipment funding plan which will permit a business to arrange for fixed amortization to retire the loan automatically.

PREARRANGE. Businessmen have come to recognize the importance of planning ahead for their financial needs rather than waiting until an emergency arises and then scurrying around trying to arrange for financial backing to meet the occasion, which often ends up with a bad or unsound plan. Some of the most successful companies have not only arranged to procure the modern machinery needed to produce textiles which tie in with a hard-hitting merchandising campaign, but have taken the steps necessary to insure its success by making arrangements, in advance, for the money that

The New Union Special LOCKSTITCH

● If you are planning for the future now, make the new Union Special LOCKSTITCH a part of your plans!



Look to Union Special

for the best in SEWING EQUIPMENT

As rapidly as manufacturing conditions permit, Union Special Machine Company is bringing to users of industrial sewing equipment all that is new and improved in machine design and construction. Even in machines little changed in outward appearance, these improvements are noticeable in smoothness of operation . . . ease of maintenance . . . fineness of work produced. In other cases, purchasers of Union Special equipment are now getting delivery on new and completely redesigned machines. For information on *"Modern Machines That Pay For Themselves,"* see your local Union Special representative or write.

quality in the making

Stroboscopic testing . . . Ultra-finishing of bearing surfaces . . . high magnification inspection of parts . . . and dynamic balancing of moving parts are just a few of the many special operations performed in the Union Special factory to give you "The BEST in Sewing Equipment."

Union Special *Machine Company*

403 N. Franklin St., Chicago 10, Illinois

When conditions are

STEAM SWEAT or SOAK

USE WOLMANIZED LUMBER*

Why? Because this lumber, impregnated with Wolman Salts* preservative by pressure treatment, will give you more years of service in places where rot-producing moisture is present.

It is recommended for use in structures exposed to:

1 Moisture in artificially humidified buildings.
2 Steam and vapor from industrial processes.
3 Condensed water vapor in walls, floors and ceilings of refrigerated buildings.
4 Soil moisture and rainwater, held in joints, etc., of outdoor structures.
5 Moisture condensed by concrete or masonry.

When you buy treated lumber, remember to specify *pressure-treated* . . . it's the only dependable kind!

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will be needed to make the wheels go round.

There are countless instances where a manufacturer has ordered machinery or equipment that will not be delivered for months to come and has arranged, in the form of an actual commitment, for the money to put right on the barrel top when the machinery is ready for delivery. The knowledge that his plans can be consummated frees not only his mind, but also his working capital, for the actual operation of his present and future business objectives.

Where a mill is faced with a plant modernization program that involves the purchase of costly equipment, the amount which must be invested becomes a serious problem. Matters of this nature quite properly call for long-range planning. To illustrate more clearly how a business would go about arranging for additional funds, take a typical example and analyse the various steps necessary in arranging an equipment loan.

FOR EXAMPLE. A firm, say the Jones Textile Co., has under consideration a program which calls for the re-equipping of its plant. Engineers and consultants have submitted blue prints, specifications, and plans recommending that several new machines and much miscellaneous equipment be installed in order to bring the plant up to top efficiency so that its business may be conducted more profitably, so that competition can be met on an even footing, so that its employees can work under suitable and more pleasant conditions.

These plans mean the investment of a substantial sum—imagination and familiarity with conditions in the textile industry can supply the figure—which is either beyond the limits of cash on hand or would seriously handicap operations if funds were diverted for this capital investment. Financial backing is necessary in order to put these plans into effect and the Jones Textile Co. is faced with the problem of raising the necessary funds. Several methods are available and it is the responsibility of management to decide which will best serve the purpose. Management must also keep in mind that the time consumed in negotiations and the end cost are factors in arriving at the final decision.

Now assume that Mr. Jones, the president of the mill, and his associates have agreed that the recommendations of their engineers warrant the investment of a substantial sum of money in new machinery and equipment. A decision has been reached to purchase certain types and makes conforming with the specifications submitted. When this machinery is in-

Ponsol*

Golden Orange 3G Paste

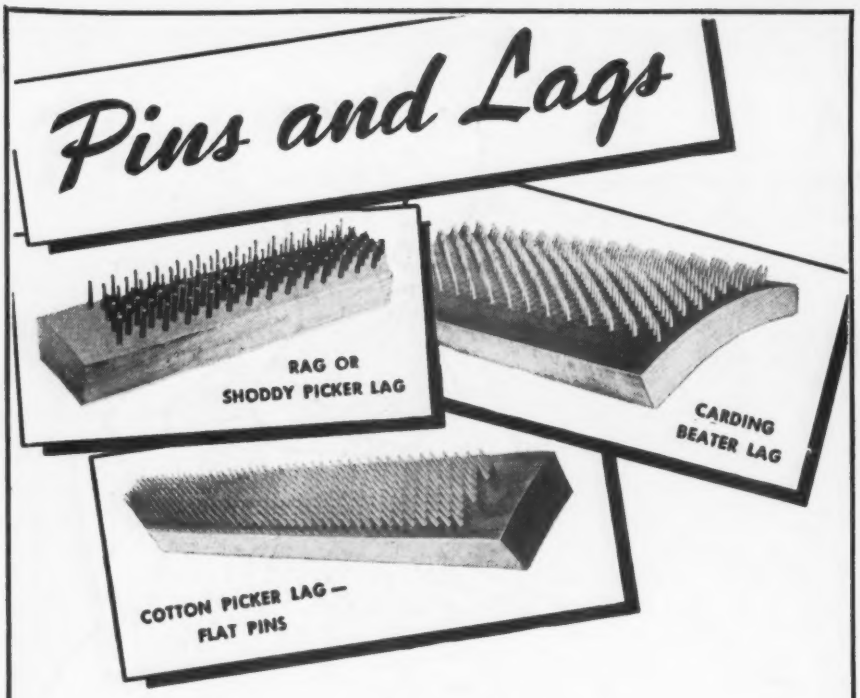
On all forms of cotton and viscose-process rayon . . . for playsuits, wash dresses, work clothes, uniforms, draperies, and upholstery fabrics . . . "PONSOL" Golden Orange 3G Paste produces rich yellowish shades. It is also important as a shading element for producing khakis, browns, and olives. Resistance to severe washing, chlorine, and light is very good. "PONSOL" Golden Orange 3G Paste can be applied by conventional methods in all types of dyeing equipment and also by the Du Pont Pad-steam Continuous Dyeing Process. E. I. du Pont de Nemours & Co. (Inc.), Dyestuffs Division, Wilmington 98, Delaware.

Du Pont Dyestuffs

DU PONT

*Reg. U. S. Pat. Off.

BETTER THINGS FOR BETTER LIVING...*THROUGH CHEMISTRY*



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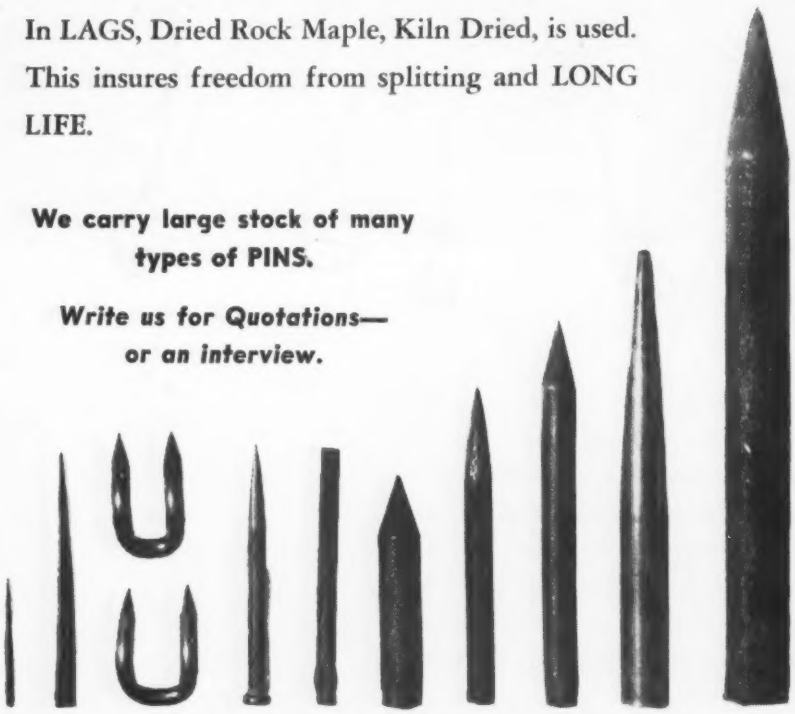
Our Hardening and Tempering Department, using NEW Processes, has achieved new developments in Lasting Qualities and Complete Uniformity in PINS. We make all types.

In LAGS, Dried Rock Maple, Kiln Dried, is used. This insures freedom from splitting and LONG LIFE.

We carry large stock of many types of PINS.

Write us for Quotations— or an interview.



WILLIAM CRABB & CO.

301 THIRD AVENUE **NEWARK, N. J.**

stalled the mill will be outfitted with modern, labor-saving equipment that places it in a position to compete, fairly and equitably, with other leading mills and to render improved service to its clients. In addition, the improvements presented excellent prospects to increase business, to add to a well-established reputation, and, last but not least, to earn more money.

OUTSIDE CASH. The amount involved made it advisable to obtain the use of outside money, and it was necessary to decide which of three methods would best suit the company's needs, while it was kept in mind that ample time in which to retire the loan in an orderly manner was a prerequisite.

The methods of obtaining the desired loan to be considered were:

1. A short-term bank loan.
2. Limited credit from several different machinery and equipment manufacturers.
3. A term-loan through a finance company which specializes in industrial financing.

A short-term bank loan would not serve the purpose for the obvious reason of the time necessary in which to repay the loan.

Asking the several suppliers to act as bankers is not proper as banking is not their function, and it may be that the terms available will not suit the mill's need.

The amount needed, however, can be obtained through an equipment-funding loan, arranged to amortize the obligation over a period of years. In addition, the financing organization should be in a position to offer sound advice in connection with the schedule of payments the mill would be called on to make.

In the example, then, the mill could decide to finance the proposed machinery purchases through an equipment loan and to call in an executive from the financing organization for the purpose of discussing all necessary details and setting up a plan of amortization.

Included in the material for this conference should be a list of the machinery and equipment being purchased, names of suppliers, total amount involved, amount of down payments, balance to be financed. After an agreement is reached on the financing terms and notice is received from the various suppliers that the purchases are ready for delivery or have been installed, a check from the financing company would conclude each purchase. When the new machinery is installed, it should start paying for itself out of increased efficiency and earning capacity and the

There is
BAHNSON AIR CONDITIONING
TO MEET EVERY TEXTILE NEED

Regardless of the problems encountered, Bahnson has the engineering experience and the specialized equipment to produce a desired air condition in textile mills . . .

Here a Bahnson Air Vitalizer System in combination with the Bahnson Economizer atomizer solves a difficult engineering problem as presented by low ceilings; yet this installation provides the large number of air changes required plus the desired condition of humidity.

The Bahnson Air Vitalizer is a dry duct system of air distribution for circulation and ventilation capable of handling frequent air changes with controlled velocity.

The Bahnson Economizer is a pneumatic self-cleaning cold-water atomizer of recent scientific refinements in principle and design.

Bahnson POSITIVE CIRCULATION LOWER OPERATING COST *System*

AIR CONDITIONING ENGINEERS

THE BAHNSON CO WINSTON-SALEM, N. C.

886 Drewry St., Atlanta, Ga. 93 Worth St., New York City 703 Embree Crescent, Westfield, N. J. 553 S. Figueroa St., Los Angeles, Cal.
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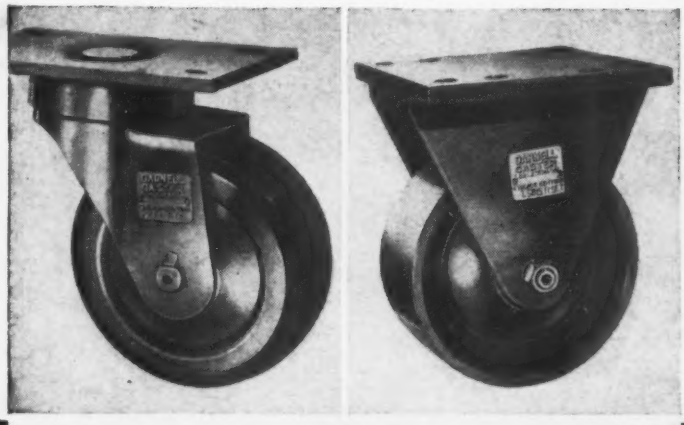
Always SWIVEL and ROLL



DARNELL

Darnell Dependability assures savings, service, safety, speed. A caster or wheel for every use.

You are sure to find the exact caster or wheel for your individual requirements in the Darnell line.

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LONG BEACH 4 CALIFORNIA 36 N. CLINTON CHICAGO 6 ILL.

complete re-equipment program could be put into effect.

FLEXIBILITY. A feature of such financing enables a mill to make a number of purchases from several different sources and then combine them all in one obligation which could be retired through a series of amortization payments. Such an arrangement possesses many advantages to the buyer which will be readily evident.

No magic formula is needed in arranging a term-loan which can be repaid over an extended period of time. Any sound, progressive enterprise can obtain the funds necessary to put expansion plans into operation and every financing plan, every method, every step is worked out between borrower and lender in a manner to meet the needs of each individual case.

Where such matters are discussed with experienced executives, accustomed to applying sound industrial financing methods and who possess an understanding viewpoint concerning the needs and prospects of a borrower, it is usually a simple matter to arrange all details of the financing with a minimum of negotiation and an absence of red tape.

One last thought concerning the use of term loans: They do not interfere, in any way, with the management of the business. On the contrary, they give the plant the almost unhampered use of the additional capital while they keep working funds free for manufacturing and marketing uses.

Lowell Textile Institute

(*Continued from page 159*)

leased become the property of the state on payment in full of all obligations incurred by the association with respect to them. The trustees of the institute may lease in the name of the state any real estate or building owned by the association, for any L.T.I. use. Land leased by the association, its property, and income are non-taxable by the state and local authorities. This arrangement provides a highly flexible means of proceeding for building expansion; the bonds and income from them are non-taxable by the state, and, if secured by a pledge of rentals sufficient to meet principal and interest, are legal investments for Massachusetts savings banks and domestic life-insurance companies.

When the proposed science building becomes available, it will add vitally to the resources of the school in laboratories, classrooms, textile engineering facilities, and testing equipment. Research in raw materials, machine design, in the chemistry of dyeing and

Saran BY NATIONAL RATTAN

THE MATERIAL THAT KEEPS PACE WITH AMERICA'S BETTER AUTOMOBILES

In today's better automobiles, as well as in public transportation equipment, the aim is for beauty, comfort and satisfactory performance. Extruded by National as a rattan, SARAN has been woven into upholstery material that meets these demands with flying colors. Notable among its many properties, is its extraordinary resistance to wear. Its flexibility and natural smoothness assure maximum riding comfort . . . you slide into a Saran-upholstered seat without tugging on clothes. SARAN defies dirt! Grease, mud or any other foreign matter can be wiped away with ease. Unlimited color possibilities permit weaving SARAN rattan into multi-colored patterns, in complete harmony with any decorative scheme. Look into the advantages of SARAN when you consider any upholstery problem.

SARAN BY NATIONAL denotes monofilament, rattan and tape manufactured by The National Plastic Products Company from Saran, a vinylidene chloride copolymer made by The Dow Chemical Company and supplied to mills, weavers and other fabricators for specific end uses.

TRADE MARK REG. U. S. PAT. OFF.

The NATIONAL Plastic Products Company

ODENTON • MARYLAND

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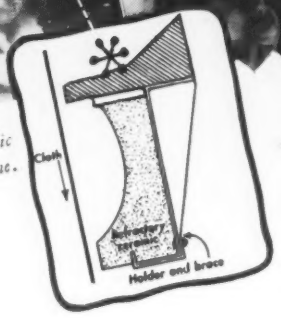
PRINT-SPEED DRYING OF RAYON AND ACETATE FABRICS WITH GAS

Infra-red GAS burners dry fabric as it leaves the printing machine.



← *Gas-fired Radiant Ceramic Burner is curved to throw the heat rays toward the fabric.*

Synthetic and natural fabrics alike respond to the rapid drying action of Gas-fired infra-red ceramic dryers. And, since they are so readily controllable the productive flames of GAS can be regulated for efficient drying of textiles, regardless of weight or drying characteristics.

The experience of Waldrich Company, Delawanna, New Jersey is typical of textile productioneering with Gas-fired ceramic dryers manufactured by Carbomatic Corporation, New York City. When installed under the frame of a palmer unit and between the quetch-box and drybox as a booster, Carbomatic infra-red ceramic dryers increased operating speeds and resulting production.

Increases of 50 per cent and more in acetate and rayon fabric drying speeds are common when modern Gas Equipment is applied in textile operations. Color fastness is improved and print smudging prevented because the dryers are synchronized with the printer to set the dye as the fabric leaves the machine.

GAS is the ideal fuel for drying, singeing, warp sizing, calendering and other textile operations. Your local Gas Company's Industrial Representative will furnish you the latest information on the flexibility and economy of GAS for textile processing.

Rayon and acetate fabric dried by Infra-red ceramic GAS burners.

MORE AND MORE...
THE TREND IS TO GAS
FOR ALL INDUSTRIAL HEATING

AMERICAN GAS ASSOCIATION

420 LEXINGTON AVENUE, NEW YORK 17, N.Y.

color, and in the management of the industry's business problems are all a part of textile education.

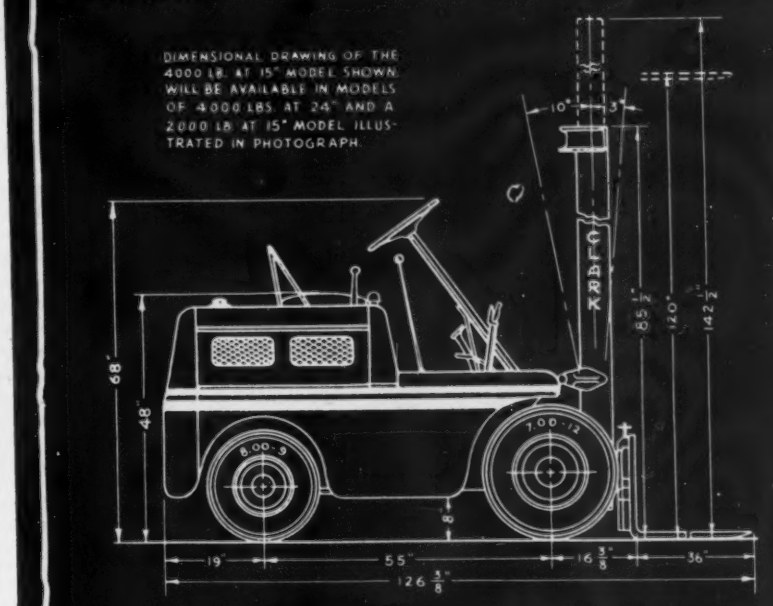
At Lowell, 12 new instructors were added last year and 11 are to be added in 1947. Four new secretaries are also in the present organization. The former three-year courses for diplomas have been dropped and new four-year degree courses created in cotton manufacturing, wool manufacturing, fabric designing, and synthetics. Hours have been reduced from 35 to 30 each week; courses in the humanities (sociology, literature, history, and labor relations) added, and arrangements made to provide manufacturing instruction for chemists and more chemistry for engineers. Night-school study is now conducted on a degree-credit basis, and summer work in the industry encouraged. About 200 students are expected to take the summer courses at the school this year.

EQUIPMENT ADDITIONS. About $80,000 has recently been appropriated for new equipment, including the following: a humidification system of the most modern type; opening equipment for the cotton department; mules and spinning frames for the wool department; a spectrophotometer and other apparatus for the chemistry department; testing and precision instruments and apparatus for the textile engineering department; machinery for the finishing department; office labor-saving devices and departmental appurtenances. In many sections, modernization of facilities is under way, including improved lighting with fluorescent equipment, additional heat and power facilities, a new physics laboratory, painting of manufacturing laboratories, and a postwar restoration of many student activities, school publications, and closer relations between alumni and institute. There are now about 2,500 alumni and 1,300 graduates of L.T.I. located throughout the world.

Students at present include 54 from 12 foreign countries. An international forum for students has been organized, with periodic meetings and discussions. Six companies in the industry are committed to the establishment of scholarships, and six fellowships are in immediate prospect. The cooperation of the New England Textile Foundation in the direction of scholarships, equipment, and improvement of salaries is of major value in the development of the textile educational facilities in the Northeast. Increasing demands upon L.T.I. for research useful to the industry present a challenging problem, valuable from the standpoint of the school and its work, and call for more adequate facilities in both personnel and equipment.

Lowell starts its second half century

A NEW SERIES OF PNEUMATIC-TIRED FORK TRUCKS



BY CLARK — THE OUTSTANDING NAME IN MATERIAL HANDLING

Announcing the

YARDLIFT-40

YARDLIFT-20*

● The new YARDLIFT series is built especially for tough and rough going—moves one- and two-ton loads smoothly over bumpy yards and crossings, slick floors and docks.

● Featuring the stability of four-wheel design, yet amazingly maneuverable, these machines afford easy operation, easy riding—the newest thing in mobile powered equipment, designed to meet a specific need in material handling.

● Equipped with pneumatic tires and a pivoted steering axle mounting — the YARDLIFT is as easy on the cost sheet as it is on the operator.

● Write for specification bulletins on both of these new fork trucks, and for the modernized "MATERIAL HANDLING NEWS", just off the press, showing New Machines and New Devices.

*YARDLIFT—20 PRODUCTION JUNE '47

CLARK TRUCTRACTOR

Division of CLARK EQUIPMENT COMPANY

BATTLE CREEK, MICHIGAN

OTHER PLANTS — BUCHANAN, JACKSON, BERRIEN SPRINGS, MICHIGAN

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FORK LIFT TRUCKS
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ELECTRIC STEEL CASTINGS
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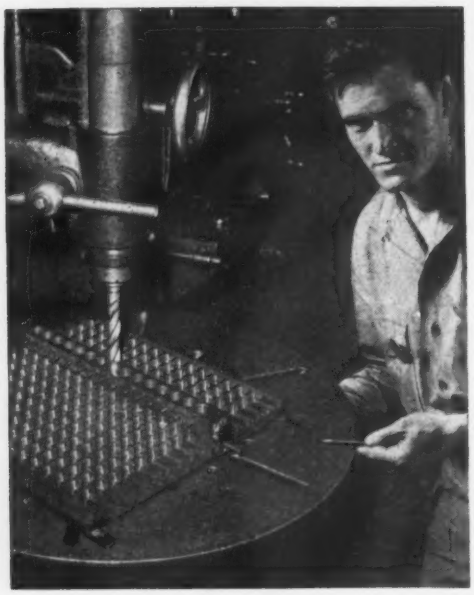
Prices on CLARK products will not be advanced in excess of increased costs.

CUT COST FACTORS WITH CLARK TRUCTRACTORS

40% Less Machining with E-Z-CUT PLATES



. . . in Stock for Immediate Shipment

Especially well suited for die bases, jigs, and other applications where considerable machining is involved, E-Z-Cut plates machine smoothly at higher speeds, with less tool wear. Other E-Z-Cut advantages: They case harden to extreme surface hardness with even gradation of carbon from case to core. Weld easily. To save with E-Z-Cut, call, wire or write the nearest Ryerson plant for quick service.

JOSEPH T. RYERSON & SON, INC., Steel-Service Plants at: Chicago, Milwaukee, Detroit, St. Louis, Cincinnati, Cleveland, Pittsburgh, Philadelphia, Buffalo, New York, Boston, Los Angeles.

Bars • Structurals • Plates • Sheets
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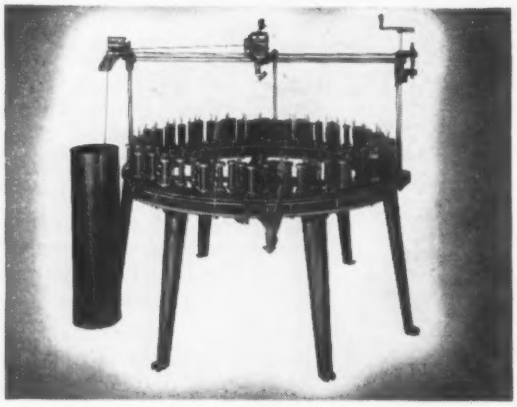
RYERSON STEEL

NEBUTTCO BRAIDERS NEBUTTCO



We are confident of our ability to give satisfactory service in arranging your braiding equipment for efficient production.

Our engineers are at your service

Let us know your requirements

NEW ENGLAND BUTT COMPANY

ESTABLISHED 1842

PROVIDENCE 7, R. I.

of service with the encouragement for success through team work on the part of the faculty, trustees, alumni, building association officers, the Massachusetts Department of Education; and an ever-growing entente between the school and the textile industry.

Replacing Lug Straps

(*Continued from page 153*)

hold the power, and during the time the shuttle is being forced out of the box, the power strap slips off the edge and is jerked into the worn center, thus transmitting a very slight pause in the picking action.

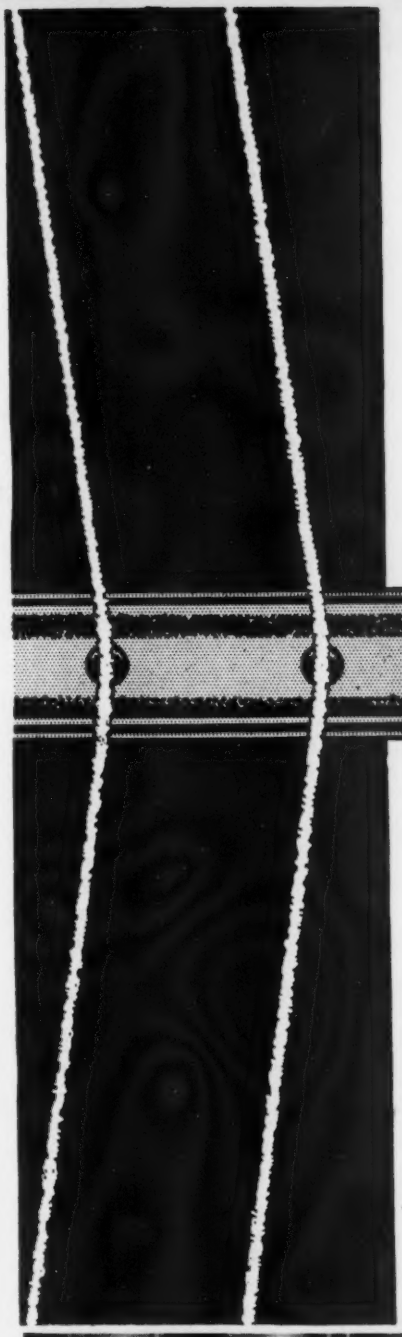
As the full force is now applied in the throw, the double action of force gives the shuttle a hopping thrust that usually causes a bang-off. This action may be but once in a few thousand picks, or may be more often if a new power strap has recently been installed.

SALVAGING LUG STRAPS. When lug strap packing has been worn, as described in the foregoing, it can often be repaired and re-used. Place the lug strap in the vise as shown in Fig. 3. Cut off the uneven packing material with a hack saw until the plug appears as shown. This will give new, uniform edge for the power strap to bear against. When picking, only one surface will be contacted and an even shuttle flight will be obtained.

However, if the leather packing is too soft or has worn too close to the rivet, if a rivet has broken off, or if the hickory or strap sides have split or are badly worn, it is necessary to discard the lug strap and make a new replacement.

When changing a lug strap, notice whether or not the power strap is badly worn also. If it is, the power strap should be changed in addition. The width of the strap should nearly equal the inside width of the lug strap. There should be just sufficient clearance to allow returning without binding.

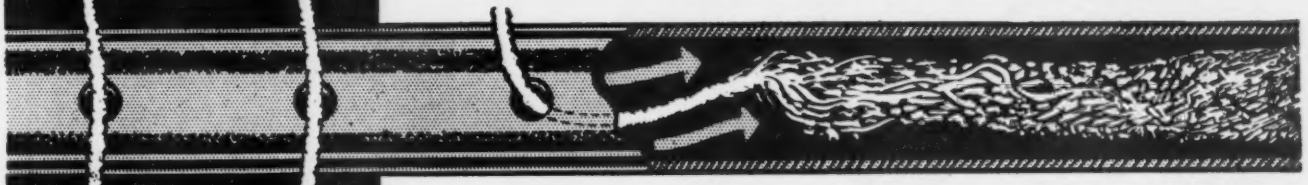
When a fixer desires to check over his section for worn lug straps and other assemblies, he should make it a point to install only a few new parts in any one day. When making a change, he should note the place where the strap has been secured to the lug stick and the clearance between the lug stick and the picking stick. If necessary, he can measure this distance so that clearance will be ¼ in. greater; then he should firmly tighten all connections. It will usually work out that the replacement is firmer and will require slightly less sweep to secure the same results as before.



....ANNOUNCING

PNEUMAFIL

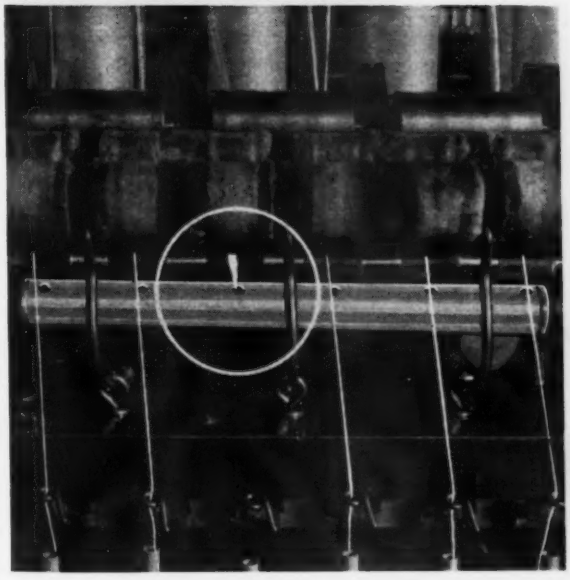
.... *The Outstanding Textile Achievement Since Long Draft*



Pneumafil* is a vacuum system which automatically picks up and collects waste from broken ends on spinning frames. It was perfected in Switzerland six years ago. Today, several million spindles are so equipped. Their performance is giving daily proof that Pneumafil *improves yarn quality, increases production and lowers costs.*

THESE OVERALL ADVANTAGES ARE OBTAINED BY

- Eliminating "wild" or "flying" ends
- Decreasing slubs, gouts, fly and end piecings
- Reducing ends down
- Reducing steel roll and top roll laps
- Eliminating stoppage to straighten out "balled-up" sides
- Decreasing the time of putting up an end
- Decreasing all cleaning in general—thread boards and roll beams in particular.



FULL INFORMATION ABOUT THE PNEUMAFIL SYSTEM WILL BE SENT ON REQUEST

PNEUMAFIL

*Reg. Trade Mark

::Pneumafil Corporation::

2516 Wilkinson Boulevard Charlotte 6, N. C.

HILD Floor Machines

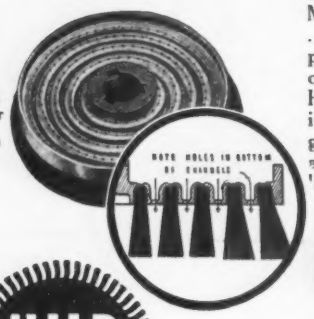
KEEP ALL YOUR FLOORS *Clean* AND *Slip-Safe*

Left—HILD Tank Type Shower-feed Floor Machine

Right—HILD Plain Handle (Standard) Floor Machine

HILD Floor Machines are designed for use with the easily interchangeable attachments pictured below to condition and maintain floors of all kinds . . . either in the mill or in office areas. Scrubbing with the Tank-Type Machine and the patented HILD Shower-feed Brush gets floors cleaner with less scrub-soap solution . . . cuts soap costs . . . does not splash water on machinery or furniture. Scrub-soap solution is fed from the tank on the handle of the HILD Floor Machine to the back of the Shower-feed Brush . . . then passes through accurately spaced holes penetrating the brush back between each row of bristles.

HILD Floor Machines speedily scrub open areas in lanes between machines . . . yet are easily guided into hard-to-reach spots under and around machinery. They are sturdily built for long, **trouble-free service.**



HILD Shower Feed Brush

Brush for Waxing or Polishing

Polishing Buffer

Steel-wool Pad and Holder

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1313 W. Randolph St., Dept. TW5, Chicago 7, Ill.

Sterling Ring Travelers

SAVINGS

Check your equipment, keep it clean, lubricated and lined up as much as possible.

Travelers will give better results, last longer and will cause less wear to old or new rings if a thorough check is made regularly.

STERLING RING TRAVELER CO.

FALL RIVER, MASS.

Adjustable Air Diffuser

(*Continued from page 141*)

the same capacity and neck diameter and spaced evenly throughout the spinning and other plant rooms. Fairly good temperature equalization can thus be obtained.

INCREASED HEAT. Since 1940, there have been new complications in plant air distribution. In the last two years particularly, the redesign of some equipment has made it possible, in some cases, for the manufacturer to produce four times the amount of his original output in the same floor area. This stepped-up volume has greatly increased the amount of heat generation with the result that consulting and operating engineers have been forced to search for more efficient air-distribution systems than the three commonly used original methods just outlined.

The first air diffuser embodying the principle of air-stream directional flow was introduced in 1940. The flexibility inherent in the design of these units makes it possible to adjust the direction of the air stream or control the air-supply volume at any time and in any area. By comparison with the three original methods of textile-plant air distribution, the adjustable air diffuser has been found to possess several advantages.

In the slotted-duct method, the chilled air is ejected in the form of a long, thin sheet, and the air mixing and temperature equalization is relatively poor when contrasted with that obtained in a 360° circular, high-velocity air diffuser.

AIR SAVING INDICATED. In a test conducted at one acetate rayon plant, a complete bay measuring approximately 40x12 ft. was isolated and temperature readings taken of the supply air at three places: at the device, at a point 6 ft. above the floor in the center of the aisle above machines, and at the same location on the floor. Readings were taken first with a slotted duct in operation. Then the slots were blanked off and eight adjustable air diffusers were mounted on evenly spaced centers between machines. Due to the improved mixing and temperature equalization made possible by the diffused air, greater temperature differentials were tried, with the result that desired temperatures were maintained at the three test points with only one half the volume of cooled air. This reduction in air volume was accomplished without any change in the manufacturing process.

OPEN THE GATES TO BIGGER PROFITS

in San Antonio's Wool Empire

Swing the gate wide open to bigger profits . . . there is splendid opportunity for tops, yarns, high-grade blankets, undyed woolen goods, in San Antonio—the center of the country's greatest wool and mohair territory.

San Antonio is close to the source of supply—30% of the nation's wool is produced in the San Antonio trade area. Water from artesian wells is exceptionally pure, ideal for scouring, and by-products are in demand locally.

The mild climate and particularly well adapted labor lower production costs and step up profit margin.

A tremendous garment industry is already established in San Antonio. Sports clothes, western-style clothes, work clothes, uniforms, men's woolen hose and other knit goods, infants' wear, juvenile clothes and many others are produced here now.

These and other factors make a huge woolen business in San Antonio a sure thing for the near future. Check the other advantages on this page—then attach the coupon to your business letterhead for *"San Antonio Sets the Stage for Industry."* You will find full cooperation and a real welcome in San Antonio.

San Antonio's Profit Boosters

LABOR There is a large pool of skilled, intelligent and cooperative labor particularly adapted to wool processing and fabrication. Major labor troubles are unknown.

TAXES AND INDUSTRIAL LAWS Texas has no state sales or state income taxes. Industrial laws and regulations are drawn to encourage the development and expansion of industry.

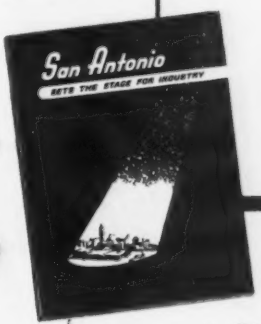
TRANSPORTATION San Antonio is served by major rail, air and truck lines radiating in every direction. Texas has excellent trunk and feeder highways. San Antonio is strategically located, convenient to low cost water transportation.

RAW MATERIAL 30% of the Nation's wool and 80% of its mohair are produced in San Antonio's territory.

POWER AND FUEL Low cost industrial natural gas is abundant. Electric power is adequate and reasonable.

LIVING CONDITIONS The mild climate permits low living costs. There is plenty of room for good living and industrial homes. Parks, playgrounds, popular amusements, sports and recreations enjoy national recognition. Cultural attractions are superior. From kindergarten through college, public and private schools maintain high standards of education.

BUILDINGS AND SITES Because of the shallow footing required and the mild climate, building construction is economical in San Antonio. Many industries use light structures and do outdoor work the year around. Choice industrial sites are still available.



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Is Down Time a pain in your neck?

Thousands of RunRite Plastic Sheaves have been running continuously, in many plants, for over six years, and still going perfectly. Under similar conditions they should do equally as well for you. Figure your savings in reduced down time alone. Then, bear in mind, that RunRites' smooth, perfectly balanced strap surface means longer life to harness straps. Once installed, they need no further attention for years of dependable service.

RUN RITE TRADE MARK Plastic Sheaves

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COLE TANKS

For over 80 years, we have been furnishing industry and municipalities with dependable elevated steel tanks. We design, fabricate, and erect, in capacities from 5,000 to 2,000,000 gals., with hemispherical, ellipsoidal, or conical bottoms.

Write for prices, stating capacity, height to bottom, and location.

R.D. COLE MFG. CO. ESTABLISHED 1854
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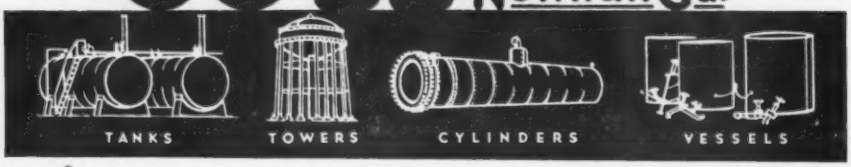


adjustable grilles are required for a given job than diffusers, as the former must be mounted on both sides of the ducts and have a relatively low exit velocity of 500 to 600 ft. per min. It is often difficult for a design engineer to know in advance exactly how far the air will carry and what will be the final direction of the air stream at the end of the "throw." Moreover, if plant layout revisions require relocation of the machines, it may prove difficult to rearrange the grilles to accommodate the changes.

Fixed-type diffusers, even though providing an even air-distribution pattern, have two shortcomings which are disadvantageous for textile-plant operation. First, the angle of air flow cannot be changed after installation; and second, because of any uneven heat generation in the plant, uniform air distribution could mean too much cooling effect in some areas and not enough in others, especially in the highest temperature zones.

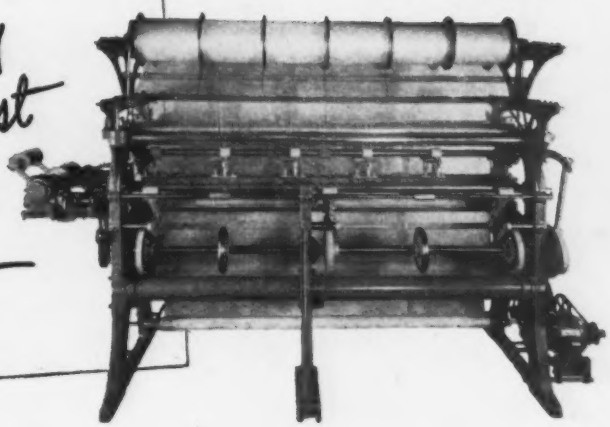
The development of a completely adjustable high-velocity, air diffuser, with a sleeve-type, volume-control damper, on the other hand has many advantages in textile-plant application. Installed on supply ducts and centered in the passageways between machines, these devices make it possible to satisfy the cooling requirements of some areas and to maintain a fairly even temperature equalization between machines.

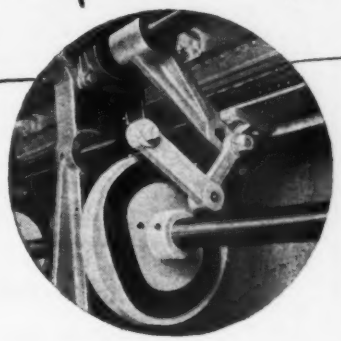
When, instead of passageway installation, the diffuser is located over the machines, the cooled air stream may be directed in such a manner as to blanket the source of heat generation. In either type of installation, the air supply can be so controlled as not to interfere with the material being drawn, spun, or processed.

In addition to the control of air pattern in these units, the volume damper increases or decreases the amount of cooling air discharged by each diffuser. This flexibility and ease of quick adjustment offers a means of meeting unforeseen conditions which become apparent only after installation has been completed and is in operation.

RAYON MILL INSTALLATIONS. High-velocity, adjustable air diffusers are in use in many textile mills and factories. Among them are plants of American Viscose Co., Celanese Corp. of America, Associated Textiles, North American Rayon Corp., Blue Ridge Textile Corp., Dunean Mills, Dublin Hosiery Mills, Excelsior Mills, and Holeproof Hosiery Co. While the largest installations have been made in plants which manufacture or spin acetate and viscose rayon, essentially the same air-distribution problems are encoun-

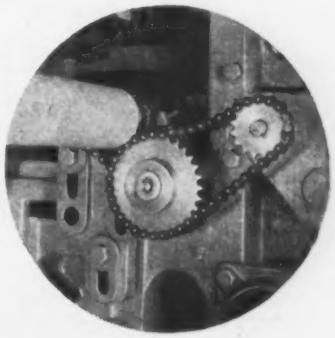
Three of the reasons why the Kidde Knitter is the last word in Raschel-type warp-knitting machines —

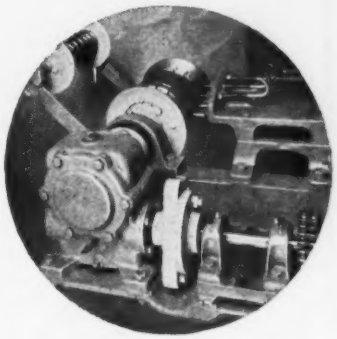




Needle Bar Suspension. A new type of suspension at ends and center of the needle bar contributes to high speeds and simplicity of pattern changes. Needle bar—pivoted on arms and swinging in an arc—is moved up and down by movement of cam followers. Needle bar stroke can be adjusted to suit pattern without changing cams. Much higher speeds are possible because conventional cylinders, pistons and weights are eliminated.

Take-Up Adjustment. The take-up roller of the *Kidde* Knitter may be adjusted vertically as a unit. Take-up motion is adjustable in increments of .002 inch by means of ratchet wheels and interchangeable sprockets. Normal range of take-up is from .009 to .100 inch. By merely changing sprockets, range may be extended still further.





Drum Motion. An outstanding feature of the *Kidde* Knitter is the eccentric drive for the drum motion. Drive speeds up the drum motion so that guide bars are shifted quickly when needle bar is at top dwell position. Eccentric drive is adjustable, so that acceleration of drum motion can be adapted to pattern requirements. This drive permits higher operating speeds than are possible with either index drive or worm feed drive.

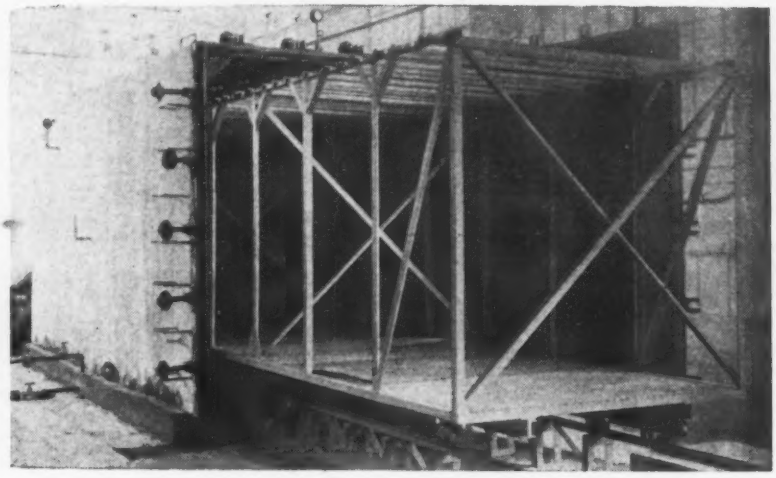
These are just three of the many unusual design features incorporated in the *Kidde* Knitter—features that contribute to wide versatility, high sustained operating speeds, exceptional accessibility.

Write for descriptive literature—or better still, see for yourself what the *Kidde* Knitter can do. A machine is in operation at our Bloomfield plant—we'll be glad to arrange a demonstration. Just write for an appointment.

The word "Kidde" is the trade-mark of Walter Kidde & Company, Inc., and its affiliated companies.

KIDDE MANUFACTURING CO., INC. • BLOOMFIELD, NEW JERSEY

3 TIMES THE CAPACITY OF ORDINARY ROUND STEAMERS



The scientifically designed square construction of the

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affords an enormous advantage over the ordinary round type. Its spacious interior is large enough to hold 100 pieces, resulting in speeding up steaming operations with maintained thoroughness. SOMERSET Products Include Agers—Washers—Steamers—Printing Tables and Other Textile Machinery

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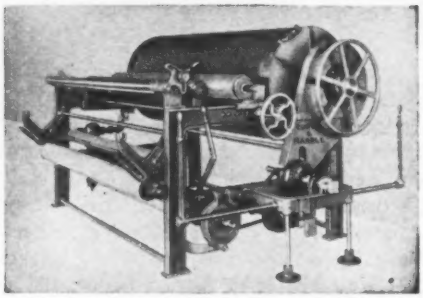


MANTLE STEAMING AND AIR COOLING MACHINE

Or Open Decating Machine

This machine gives more life to the goods in both appearance and "feel". In appearance they have a permanent lustre, (not gloss or shine) but brightness and clearness of color. The "feel" of the goods is improved—gaining richness, mellowness and more body. Made with 24″ or 36″ diameter cylinders.

Curtis & Marble
MACHINE COMPANY
WORCESTER, MASSACHUSETTS

tered in wool and cotton mills. These problems are likely to be heightened as a result of the present concerted effort to step up production by employing new engineering developments and techniques.

One of the difficulties met in the air-distribution systems of cotton and wool plants is that of lint accumulation which makes periodic cleaning of the equipment necessary. An air diffuser, with simple construction and a single, circular air stream, lends itself readily to cleaning from below without the necessity of dis-assembling and re-assembling.

Textile-plant air-distribution systems require (1) high velocity, draftless diffusion; (2) adjustability of each unit for air direction and volume control and (3) simplicity of construction to facilitate cleaning. These requirements point to the use of the adjustable type of air diffuser.

Twist-Setting Installation

(*Continued from page 116*)

bin labeled "11½." Filling comes down the chute onto the conveyor belt, and the belt carries it toward the conditioning machine. At the end of this conveyor, the filling is dropped onto an inclined conveyor belt, Figs. 1 and 2, *b*, which carries the bobbins to the top of the conditioning machine and drops them into the conditioning chamber, Fig. 1, c.

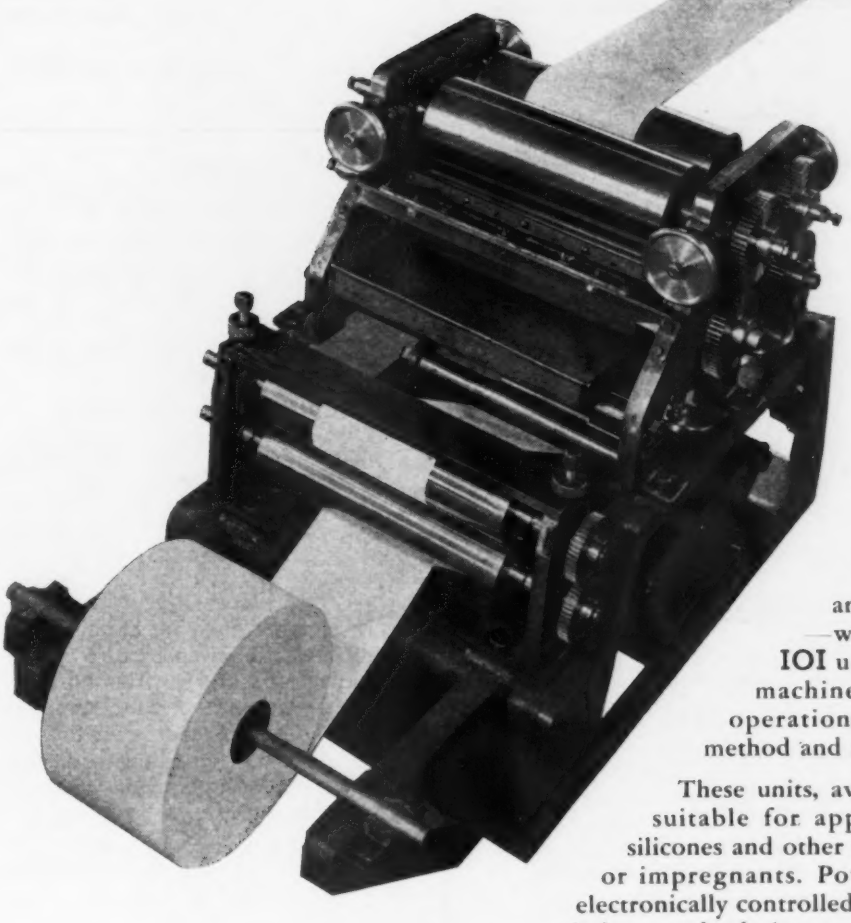
The Niagara machine, manufactured by Seydel-Woolley & Co., Atlanta, Ga., is arranged for conveying the filling through the machine by gravity and subjecting it to a spray of conditioning fluid during the course of its travel. The supply of fluid is held in barrel *d*, Fig. 1, and is forced through a filter to four sprays in the machine.

Yarn is entered into the twist setter at entering baffle a, Fig. 3. From this baffle, the filling drops to middle baffle grill *b* and then to bottom baffle grill c. Two sprays, 1, subject the yarn to the first treatment with liquid as the bobbins go over grill *b*. Sprays 2 repeat the wetting process as the bobbins go over grill c. Means for regulating the amount of liquid sprayed and for straining and reusing excess fluid are provided.

From grill c, the yarn is delivered into a filling box. At Pacolet No. 4, the yarn is allowed to age for about 1 hr. to ensure adequate penetration of the twist-setting solution and to prevent dirtying the wet yarn.

The mill has 1,524 X-Model Draper looms, 32 to 60 in. in width, operating at 152 to 192 picks per min. To condition the filling required by these

RIGHT START FOR A *Fine Finish*



UNIVERSAL TYPE COATING MACHINE ...IOI ENGINEERED

• It augurs well for a fine finish on any web material—fabric, paper, or film—when it gets off to a flying start on an **IOI** universal type coating machine. This machine provides unusual flexibility of operation, easy interchangeability of coating method and accuracy of coating thickness.

These units, available for webs up to 60" wide, are suitable for application of hydrosols, organosols, silicones and other types of organic or inorganic coatings or impregnants. Powered by mechanical, hydraulic or electronically controlled drives, they can be synchronized with windup stands, drying oven conveyors, and tension or pull rolls as required in any particular coating system.

IOI coating machines are precision machines throughout, featuring precision-ground rolls, highly accurate bearing mountings, hollow rolls for heating or cooling, micrometer roll adjustments and micrometer doctor blade adjustments.

These machines, adaptable for roller coating, dip and flow coating, or scraper knife coating, are typical of **IOI** ingenuity in the engineered application of heat in continuous operations.

See our Catalog in Sweet's File—Process Industries. Complete details of IOI installations adaptable to your industry are also available in booklet form.

INDUSTRIAL IOI OVENS, INC.

IOI ENGINEERING VERSATILITY

13825 TRISKETT ROAD CLEVELAND 11, OHIO

ASSOCIATED COMPANY: JAMES DAY MACHINERY LTD., LONDON W.1, ENGLAND

looms, it is necessary to run the conditioning machine about 50% of the time that the mill is in operation.

Another advantage of using the twist-setting installation, the mill reports, is that operating and maintenance costs are negligible. A ½-hp. motor and a pump are the only moving parts of the installation, with the exception of the auxiliary handling conveyors. The twist setter itself has no moving parts. During a year and a half of operating this installation, the mill has had no expenses for replacement parts.

Only one attendant is needed to operate the machine.

Carding Details

(*Continued from page 139*)

and results obtained from them have been very favorable. There are practically no spinnable fibers in the waste."

The following figures show the results of comparative tests:

Card waste	*Perforated screen (%)*	*Rib screen (%)*
Cylinder and doffer strips	1.02	.81
Fly	0.51	2.65
Flat strips ..	2.67	2.27
Total ..	4.20	5.73

The method used for cleaning and oiling cards was given by each of the 29 mills that sent in written answers. In nearly every case, the cleaning is done by the card tender and the oiling is done by the grinder. A few mills relieve the card tender of some of the cleaning load by assigning the mopping of the sides to a cleaner or a lap-hauler, or by having the stripper clean the card fronts.

"GANG" GRINDING. The "gang" system of grinding—which consists in breaking the grinding job down into several tasks and assigning a "specialist" to each of these tasks—was discussed by Mill No. 21. This mill wrote:

"We do use the so-called 'gang grinding' system. We use four grinders on each shift, and in addition to these grinders we have four setters on the first shift. Two of these setters set backs and two set fronts.

"The grinders clean the cards thoroughly by blowing off with air and removing all chokes. They set the grinding rolls, and after grinding they set the doffer to the cylinder and the doffer comb to the doffer. They also start up the card. These men grind 24 cards per shift.

"The back setters set all screens, back plates, continuous strippers, lick-

BOOTH
Quality Card Clothing
Aids Your Cost Record

By developing the full efficiency of your cards, BOOTH QUALITY CARD CLOTHING makes a definite SAVING in your production costs. We suggest you try it.

A complete line including Cylinder Clothing, Doffers, Workers, Strippers, Tumblers, Fancies, Rings, Lickerins, Feed Rolls, etc.

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WARP BEAMS AND FLANGES—BOTH METAL AND WOOD

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CREELS FOR
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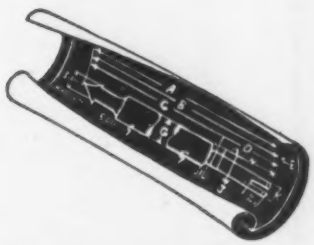
RAYON BRIGHT - RCK BLACK

TWO FAMOUS FLYER FINISHES

RAYON BRIGHT is highly buffed and polished to resemble a chromium plated finish. This finish was developed especially for use in Rayon mills where conventional finishes were not satisfactory.

RCK BLACK is a beautiful, glossy, highly rust-resistant finish that has proved so superior in White Goods mills that today over 400,000 are in use in mills from Maine to California.

In either of the above finishes . . . all flyers are completely rebuilt to highest standards before the finish is applied. Whether you prefer RAYON BRIGHT or RCK BLACK . . . Ideal is equipped to give you the finest in workmanship and service.



SPINDLES REBUILT TO FACTORY BLUEPRINT SPECIFICATIONS

We furnish spindles and flyers while yours are being repaired

IDEAL MACHINE SHOPS

INCORPORATED

BESSEMER CITY, NORTH CAROLINA

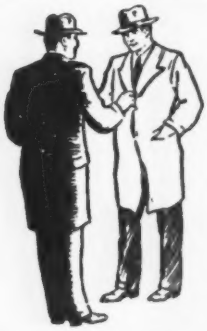
23RD YEAR OF CONTINUOUS SERVICE TO TEXTILE MILLS

THE TEXTILE INDUSTRY IS TALKING ABOUT

DRUMMOND SOAP FLAKES!

THE SAME FEATURES OF DRUMMOND SOAP—*Plus*

EASY TO USE—SUDS BETTER!



Drummond Flakes are so easy to use! And you couldn't get a flake that suds better! Note these Drummond Soap features: high body with low alkali content . . . leaves fabrics perfectly clean with softer feel, brighter colors, and whiter whites. Try Drummond Flakes and note the difference in your fabrics. Ask for Drummond Flakes or Solid.

Want to try a sample first? Write today for free working samples. Try them on your own goods. You'll want to use Drummond all the time.

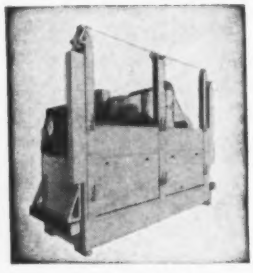
Standard Soap Co. of Camden

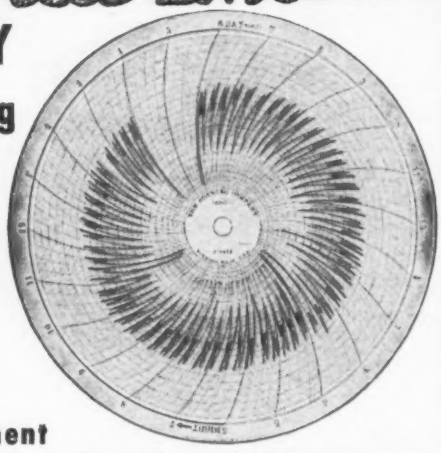
205 South 2nd St.
CAMDEN, N. J.

G. TANGUAY
281 Harris Ave., Woonsocket, R. I.

The Fleet Line

For UNIFORMITY in Yarn Conditioning





Use FLEET LINE Equipment

The chart shown herewith was taken from the recording instrument on a Fleet Line Yarn Steamer and Conditioner in Guerin Mills, Woonsocket, R. I., and illustrates the UNIFORMITY of operation which prevails with this machine.

This results in exceptionally uniform yarn, and the mill is able to handle filling bobbins and larger packages interchangeably. Operation is wholly automatic.

Guerin Mills is conditioning its entire yarn output with this one machine, handling 16 duck baskets, stacked in 2 levels, at one time. Each cycle on the chart means 800 lbs. of yarn conditioned.

Catalog on request

RIGGS AND LOMBARD INCORPORATED

FOOT OF SUFFOLK ST., LOWELL, MASS.

erins, mote knives, feed plates, and lap guides, and check the feed rolls. Each man sets six cards per shift.

"The front setters set flats, stripping combs, stripping plates, and draft plates. They also set brushes on flats and adjust flat chains. Each man sets ten cards per day.

"Our grinding frequency is 210 hr. We grind about 7½ hr.

"We feel that our system gives good results. We are able to train specialists for the various jobs.

"If plenty of experienced grinders were available, or the necessity for training grinders were not so acute, we would prefer that a grinder be responsible for all of his work."

CLOTHING WIRE. Written answers from twelve mills indicated that 100s clothing wire on cylinders produces fewer neps than 90s wire. Eleven of the mills expressed this opinion. In regard to which count of wire will remove more waste, six mills stated 100s wire and three said 90s wire.

A wire count of 120 for cylinders and 130 for doffers was formerly used at Clark Thread Co., Clarkdale, Ga., it was reported from the floor. These counts have been discarded and 100 on cylinders and 110 on doffers are now used. In carding 1⅛-in. Middling cotton, the wires formerly used produced 30% fewer neps than the coarser wire now used.

Sixty-four deliveries of controlled-draft drawing have been in use at Bibb Mfg. Co., Columbus, Ga., for approximately six months, J. S. Turner, agent, reported. The results so far have not been satisfactory. The mill had expected to operate these frames at 96 ft. per min. at an efficiency of 90%. So far, the efficiency of operation at this speed has been only 70%.

More maintenance is necessary at Bibb on this type of drawing than on conventional frames. Waste is also increased because of the necessity of tearing off a yard or more of the tail end of the lap. Stock run through one process of controlled-draft drawing has approximately 17% more ends down at the spinning frame than stock run through two processes of conventional-draft frames.

Fly-frame rolls and spindle bolsters are cleaned with pneumatic cleaners at Exposition Cotton Mills Co., Atlanta, Ga., J. C. Edwards, Jr., reported.

A fine-wire brush is used to clean and polish the rolls, and it is not necessary to remove the rolls from the frame. The cleaning job is satisfactory and leaves the rolls smooth. Some trouble is experienced with wires flying out of the brush.

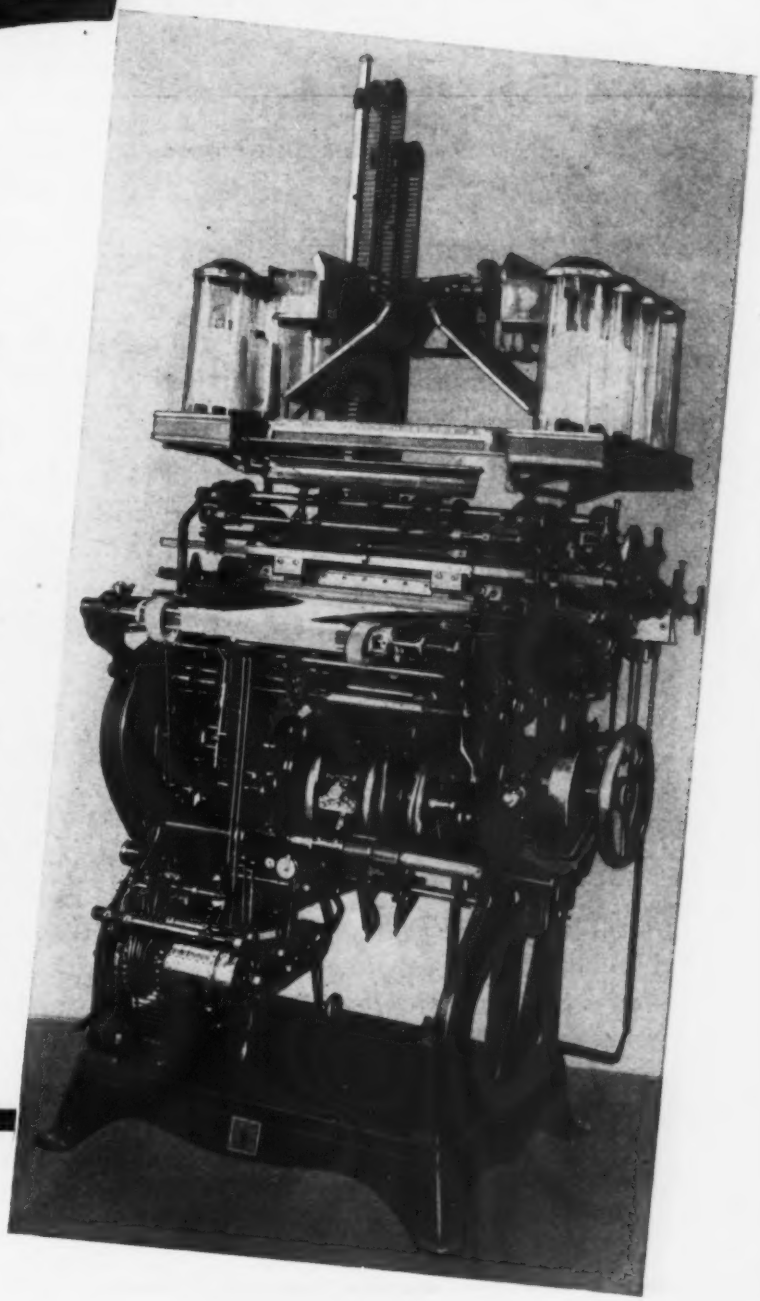
The bolster cleaner is operated with the mill's usual air pressure.

as the GAUGE becomes *Finer* it's advantages become *Greater*

WILDMAN

Single-Head, Single-Unit, Full-Fashioned

HOSIERY MACHINE



That's a wonderful feature about this Wildman single-head stocking machine. Its advantages are more pronounced as the gauge becomes finer because this machine is not affected by changes in temperature. And remember

IT KNITS THE ENTIRE STOCKING IN ONE OPERATION

No change-overs, no stopping and starting, no bad matching. This Wildman machine will produce stockings a few hours after it arrives at your mill, as it is shipped complete, ready to go to work for you.

WILDMAN MFG. CO., Norristown, Pa.

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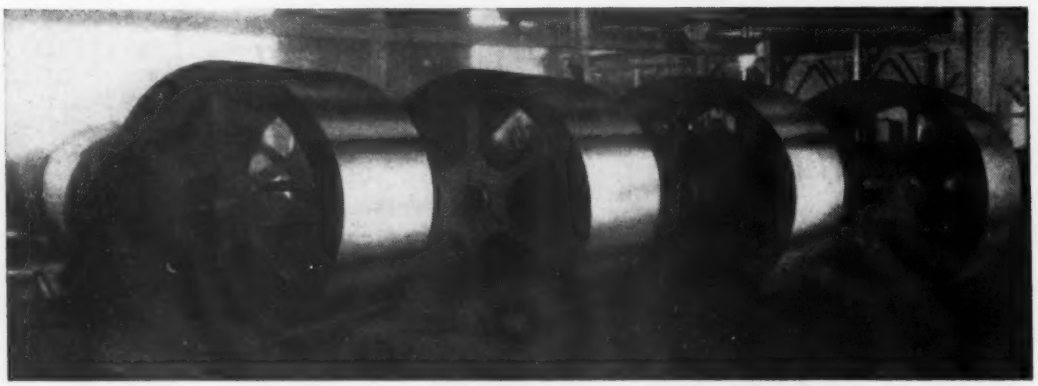
When you buy STAINLESS STEEL CAN DRYERS it is economical to pay for QUALITY workmanship

UNISTEL STAINLESS STEEL CANS and CYLINDERS are regularly constructed to the A.S.M.E. UNFIRED PRESSURE VESSEL CODE with NATIONAL UNDERWRITERS BOARD STAMP, requiring the following procedure—

1. Approval of design of pressure parts.
2. Approval of welding procedure and certification of welders.
3. Certification of chemical and physical analysis of both the stainless and carbon steels used in pressure parts.
4. Inspection during fabrication.
5. Inspector witness of hydrostatic test to twice the working pressure.



Four stainless steel jacketed back dryer cylinders in process of assembly in our shop. While these cylinders are seven feet in diameter with sixty inch face, yet the balance was so nice that when mounted a shopman could start rotation of a cylinder with the pressure of one finger.

Engineers — Designers — and Builders of Back Dryers, Can Dryers, Kiers, Kettles, etc.

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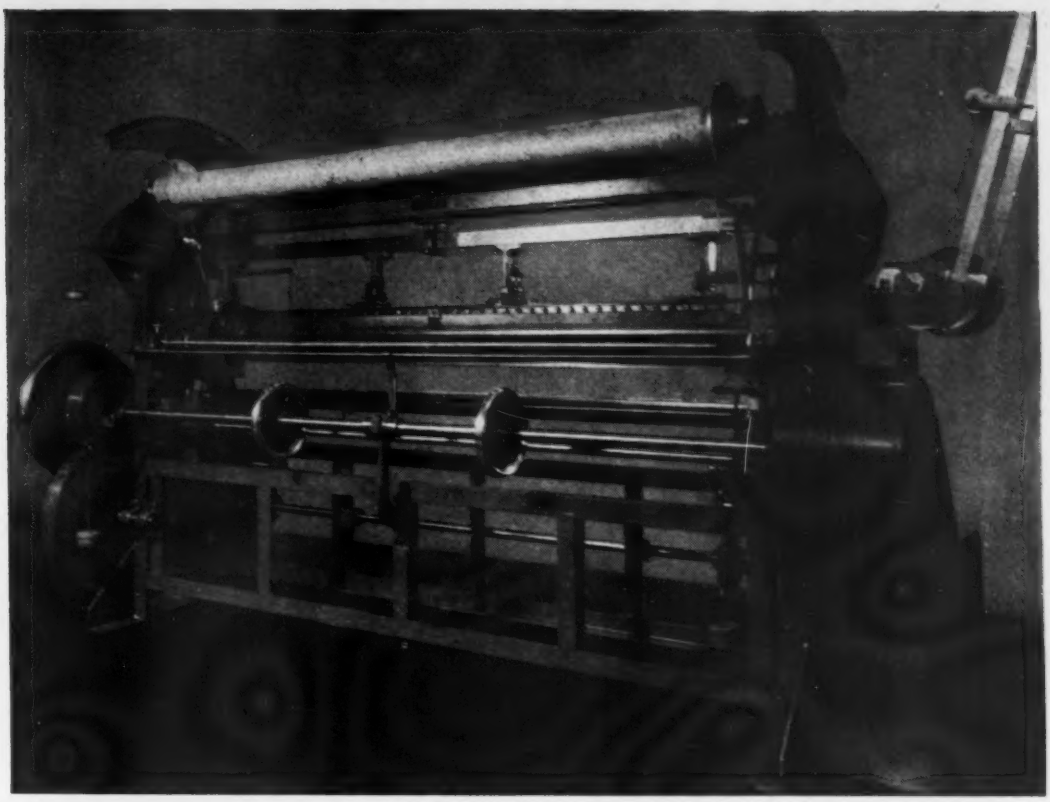

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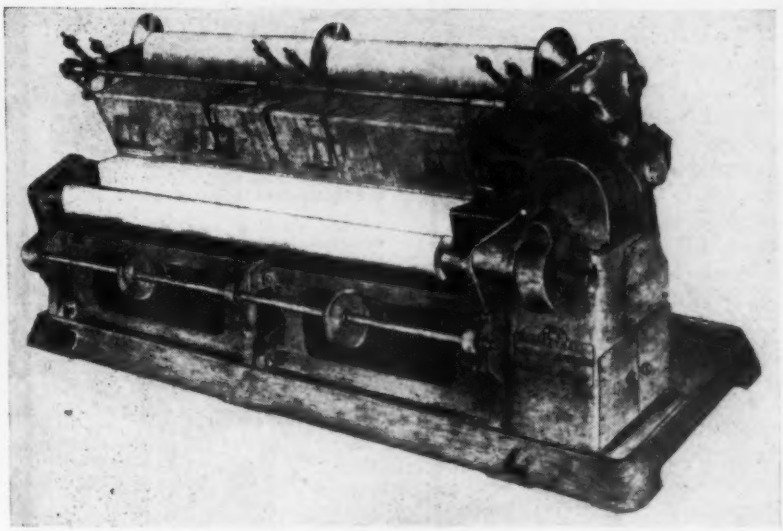
RASCHEL TYPE WARP KNITTER

A New 1947 Model

HIGH SPEED WARP TRICOT MACHINE

ROBACZYNSKI RASCHEL KNITTER Built in two types: (1) For hand or power operation. (2) for high speed power operation. With fabricated frames and connecting braces, including brace over top of machine supporting the guide bar rod with bearings other than those in the frames. More than 30 years of experience in building flat knitting machinery is your assurance of its ability to withstand high speeds over a long and carefree life.



ROBACZYNSKI TRICOT

At long last a sturdy compact, high speed machine. Capable of continuous operation with chain link or pattern wheel, thus permitting a large variety of patterns with either one or two bars. Correct height for the operator and simple to operate. Handles all fibers in widths of 90" - 168" - 180".

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Write for prices and full details.

Wayne Manufacturing Co.

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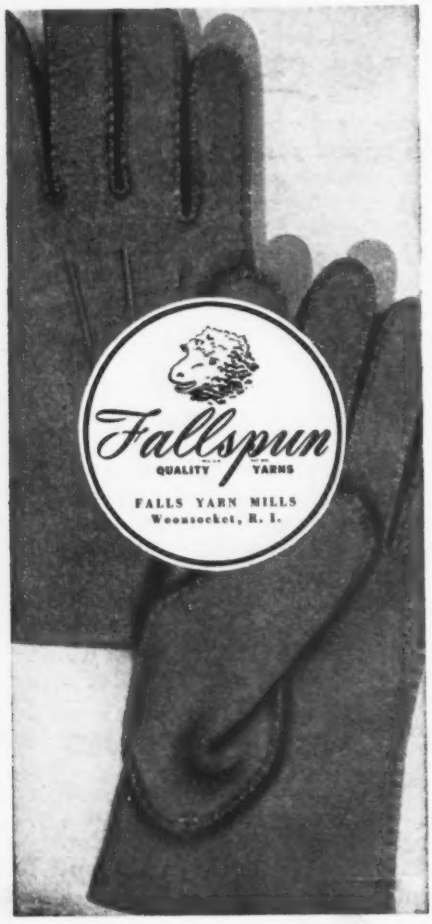

Dip in Textiles

(*Continued from page 103*)

These comparisons would suggest a possible standard in coming months of 7 yd. a person. That level would be supported by whatever backlogs of needs are hanging over from the 1942-45 war period, when cottons-rayons supply was less than 6 yd. for every civilian.

Such a 7-yd. standard, plus exports, would call for virtually capacity production of rayons and a 9,000,000,000-yd. output of cottons—only 10% less than the rate that has been reached so far this year.

DROP OF 10%. By that count, then, cotton yardage production probably would not fall more than about 10% in the coming recession, and perhaps less. Combined with the price reductions indicated, that change would about bring value of cotton-textile output back in line with national income, even if income fell as much as one-fifth.

Such calculations only suggest a tentative basis for what is widely believed anyway—that the textile recession will be much more moderate this time.

The main allowance for exports, incidentally, includes a little more than the nearly 800,000,000 yd. of cottons shipped abroad in 1946. That was less than 9% of production. The markets opened by the lifting of U. S. export controls in March have been offset by growing foreign resistance to recent American prices. Hence little 1947 export gain over 1946 lies in store.

As for the woolen and worsted industry, normal yardsticks have long since been left behind. Soft woolens, particularly for women's wear, were clearly overproduced by late last year. But will such fabrics drop back, by more than half, to prewar levels? Optimists deny that they can and point out that total U. S. employment of women is up 50% from 1940 versus 10% for men, boosting female buying power.

Certainly the worsted branch of the industry, for men's wear, stands in a relatively strong position right now; and autumn prices have been upped. Some skeptics count on buyer resistance, encouraged by recession, to make itself felt in the autumn.

Balance between two such different market trends as in woolens and worsteds may be struck at a level of total wool-industry output one-fourth lower than last year. Production has fallen at least half that much already, so a sharp drop is certain; a fair question is, will it be more?

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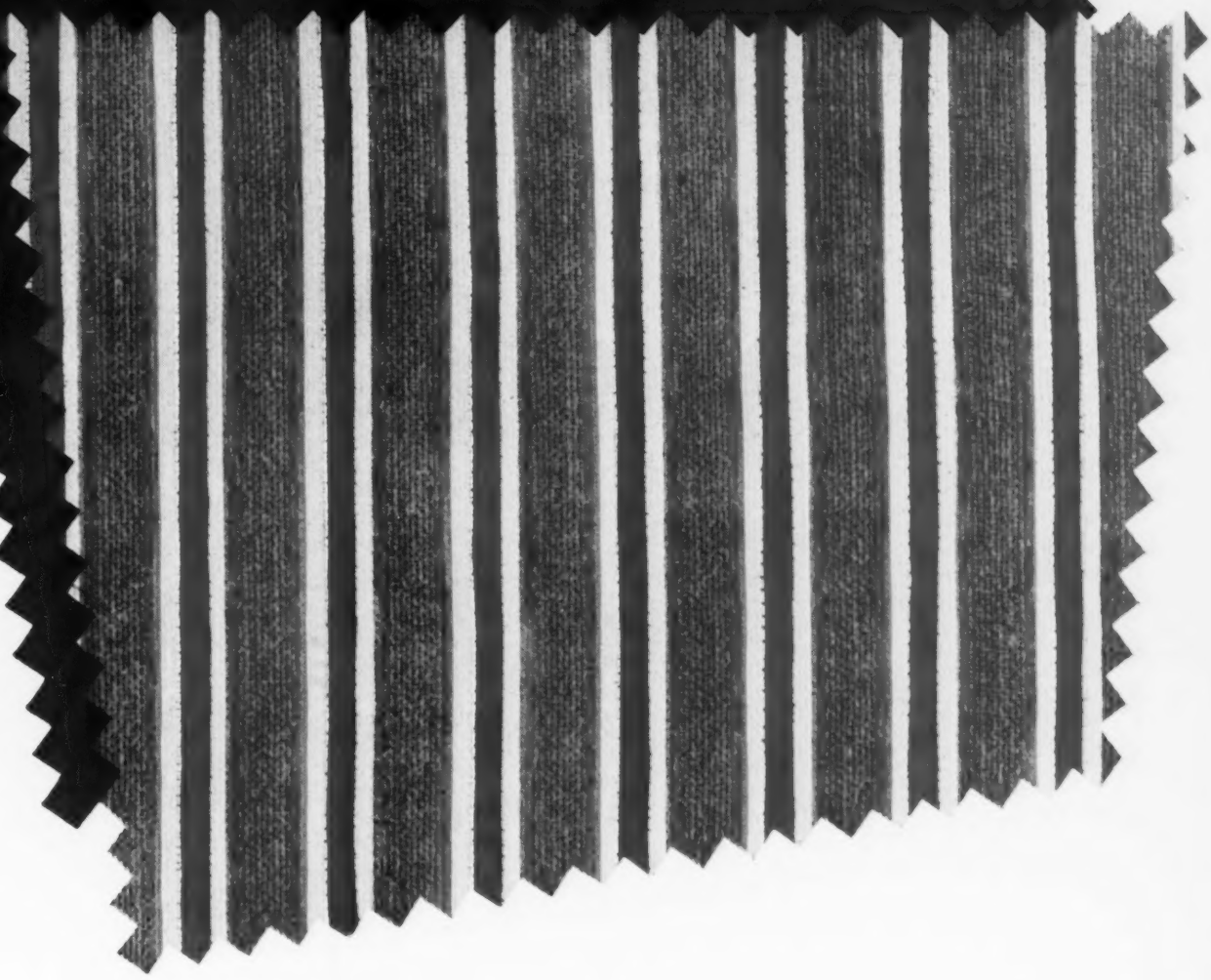
HOW WOULD YOU PRINT THIS PATTERN ON *Aralac + Cotton* FABRIC?



Acme Finishing Company was asked by Stehli and Co., Inc., prominent New York Converter, to print this pattern on a fabric consisting of 55% Aralac and 45% cotton. For this unusual job, Acme executives chose the following unusual, but fool-proof method.

The gray stripe was printed with the new low-crock Aridye* Black FK 4214 cut 1:80 with Aridye Clear 6214. The red was printed with an Aquadye* emulsion made with Rapidogen Red G dissolved by the Rapidogen Developer Method and added to the aqueous phase of the emulsion. After printing, the fabric was dried, acid aged, washed, and finished.

Result—a well-covered, smooth print, with a uniform shade on both the Aralac and cotton.

Important—the Aralac and cotton fabric suffered no damage as might have occurred with strongly alkaline vat pastes.

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Textile Equipment News

(Continued from page 164)

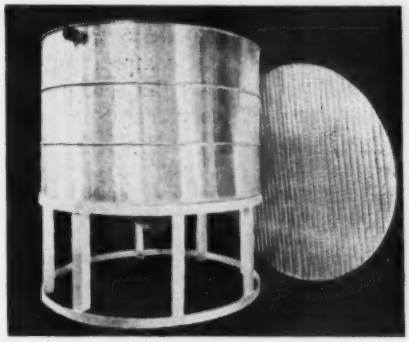
the specimen. The two disks are mounted on parallel shafts so that they revolve in the same plane, with the specimen holder mounted slightly higher than the abradent disk.

An unusual feature of the machine is the abradent, which consists of strips of clock spring, 0.025 in. thick and spaced $\frac{1}{8}$ in. apart, in one face of the abradent disk. The edges of the springs are lapped and ground to a plane surface. Non-uniformity of abradent over the surface of the disk is eliminated by revolving the abradent once more than the specimen in every 240 revolutions.

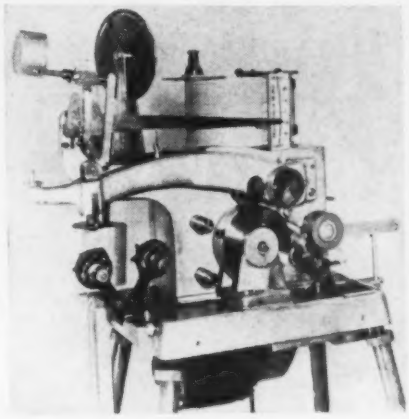
Except for the difference of one revolution in every 240, the speeds of abradent and specimen are the same.

Stainless-Steel Tanks Have Lattice Bottoms

Stainless-steel tanks with lattice-type false bottoms have been announced by Rodney Hunt Machine Co., Orange, Mass. They may be had in round, oval, half-round, square, oblong, or almost any design to fit any storage or processing problem, it is reported. The tanks are pre-formed in order to stabilize pressure on the sides when filled with liquid.



Lattice-bottom tanks are available in any design or shape. (Rodney Hunt)



Pacific Mills sliver and yarn tester, described in March Textile World, p. 148.

Duplex Loom Cloth Roll Collapses for Removal

A new duplex cloth roll for looms has been announced by William McCaskie, Inc., 110 Chace St., Fall River, Mass. The two-purpose cloth roll is reported to be constructed to last indefinitely, it is designed to be collapsed within the roll of cloth, slipped out, and reassembled in a moment's operation by the weaver.

The top photo shows the roll totally collapsed, the middle photo shows the roll partly collapsed, and the bottom picture shows the roll assembled.

The use of the new roll is reported to eliminate the necessity for spare rolls and the necessity for handling them from one department to another. The roll is designed to give the cloth a positive take-up at the start of a new cut of cloth by simply tucking the cloth in the space between the two bars of the roll.

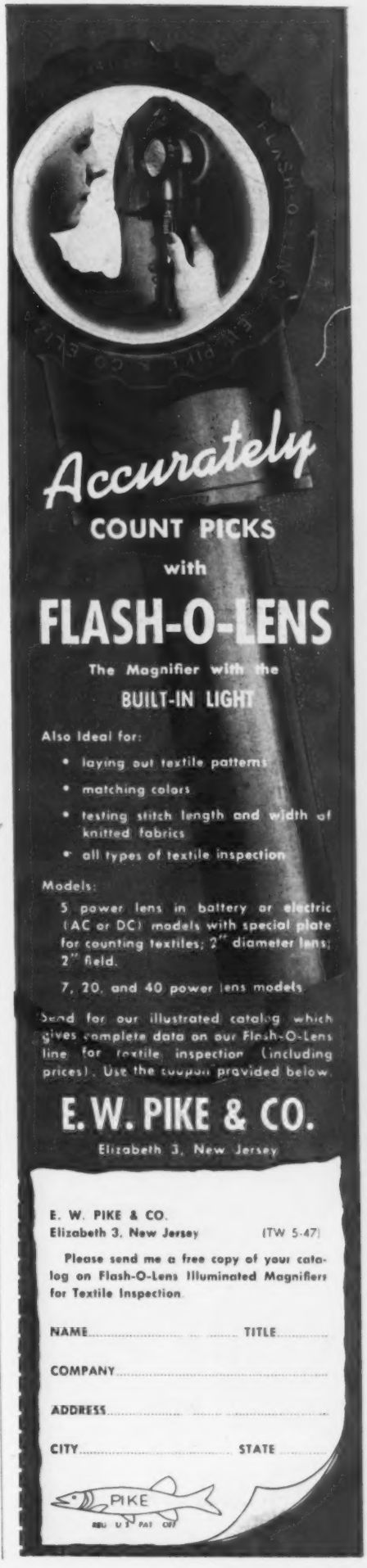
No change of loom parts is necessary when applying the rolls, which are made to order to fit any width of loom and, with slight change, are adaptable to any loom, it is stated.

New collapsible loom cloth roll is designed to eliminate need for spare rolls and to cut down interdepartmental handling. (McCaskie)

Synthetic Sapphire Guides Resist Abrasive Action

Synthetic white-sapphire thread guides reported to resist abrasive action of fibers and to outwear metal or porcelain guides many times have been announced by Linde Air Products Co., 30 East 42nd St., New York 17. The highly polished surface of the guides is said to resist the accumulation of lint.

Of gem-stone quality, the synthetic-sapphire material is reported to be identical in physical and chemical composition with the natural mineral. As produced, the sapphires are said to be single, homogeneous crystals which have uninterrupted mirror-smooth surfaces and which have no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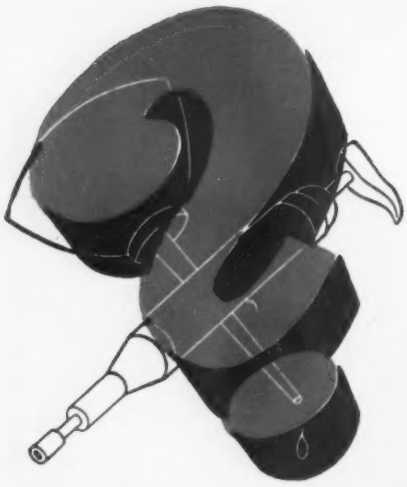

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The question of selection of the proper type and consistency of lubricants need offer no problem. LUBRIPLATE Lubricants are available from the lightest fluids to the heaviest grease types. All reduce friction and wear, protect against rust and corrosion, and are more economical than conventional lubricants. Let us prove our case.

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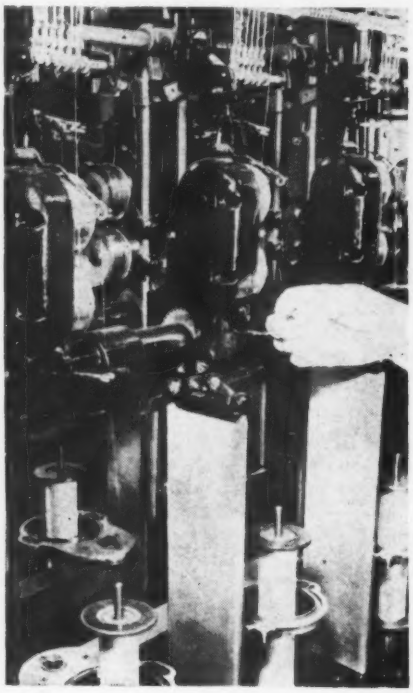
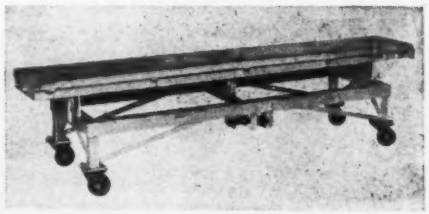
potential weak spots such as may develop in multicrystalline structures. The material has a hardness rating on Moh's scale of 9 as compared with 10 for the diamond and 5.5 to 7 for hardened steel.

The combination of smoothness, hardness, and homogeneity are reputed to give the synthetic sapphire exceptional qualities of strength and wear resistance.



Synthetic white-sapphire thread guides, combining smoothness, hardness and homogeneity, have exceptional strength and wear resistance. (Linde)

Warp Beam Truck Has Tilt Top

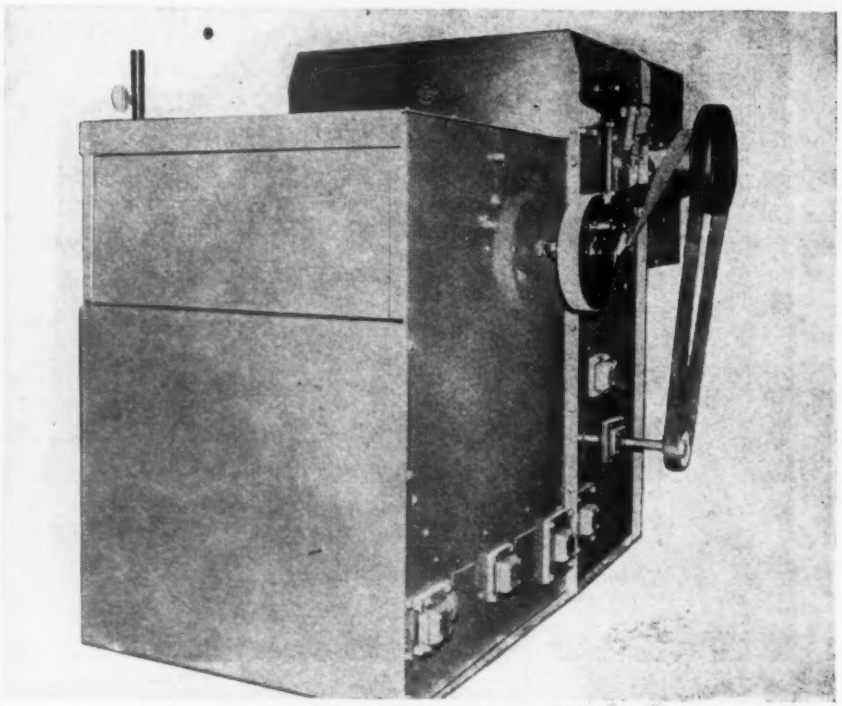


A warp-beam lift truck which will handle 21-in. beams, announced by Robert Reiner, Inc., Weehawken, N. J., is mounted on casters for maneuverability and has a tilt top to facilitate loading and unloading. (Reiner)

Blending Feeder Uses Solid, Full-Width Aprons

A new blending feeder announced by Troy Whitehead Machinery Co., Inc., Charlotte, N. C., is of welded-steel construction and is said to be smaller in size than any other machine of similar production capacity. All sprockets, gears, and chains have safety covers and are equipped with enclosed, self-aligning Oilite bearings; all driving pulleys are made of light, durable cast-iron alloy; and slip-type removable inspection plates are designed to permit easy cleaning.

A combing attachment is standard equipment on the new machine, replacing the old wood or steel kick-off roll. Full-width, composition belt is employed to carry the slats on the lifting apron; and the conveyor apron,



New blending feeder is equipped with combing attachment at no extra cost, is simplified by elimination of 28 internal working parts. (Troy Whitehead)

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Signed . . . . . .
Fredericka Boger

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One of the largest and fastest growing divisions of the country's biggest industry—the multi-billion dollar food industry—is the production of fresh fruits and vegetables. The farm value of fresh fruits and vegetables—not counting the quantities canned and processed, was over $1,300,000,000 in 1944, according to the latest estimate of the U. S. Department of Agriculture. Shipments in 1945 by boat, express and freight alone amounted to over 400,000 carloads. These huge totals exclude such staple crops as grains, potatoes and citrus fruits, and include only those types of fresh produce particularly adaptable for pre-packaging in transparent wrappings.

Produce growers, shippers, and receivers increasingly are adopting modern pre-packaging. Vegetables are trimmed, washed and wrapped, ready for the housewife to use. Fruits and berries are protected by a transparent wrap that reduces waste, handling and spoilage. Chain stores and growers have made exhaustive tests of pre-packaging—and the transparent packaging material that has been proved ideal is Lumarith*, the cellulose acetate plastic film pioneered by Celanese Corporation of America.

The Lumarith transparent wrap remains crisp when wet. It is non-fogging and retains its crystal transparency in the presence of moisture. It is waterproof, but at the same time permits the passage of oxygen and carbon dioxide. This important property allows vegetables and fruits to "breathe"—maintains natural succulence and freshness.

Through research and field tests, Celanese has cooperated closely with the food industry in developing modern methods of packaging. To help meet industry demands for packaging materials, Celanese is increasing current production of Lumarith films—with long range plans for still further expanded production. Celanese Corporation of America, 180 Madison Avenue, New York 16, N. Y. *Reg. U. S. Pat. Off.

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(70)

MISSOURI
the Heart of America

instead of utilizing slats, is a solid, corrugated, fireproof composition apron. Aprons run on light metal rolls instead of on sheaves, which is said to assure true running of belts as well as to eliminate stretch.

Elimination of 28 internal working parts is said to reduce the possibilities of mechanical failure and to effect savings in time and labor when replacing parts.

An automatic hinged gate in the upper feed chamber is designed to stay closed when the operator is not feeding the machine. A mechanical signal indicator is provided to allow the operator to determine immediately the amount of stock in process at any time.

Precision manufacture of all parts to permit installation of new parts without individual fitting is cited as an important feature of the new feeders.

Yarn-Conditioning Device Works While Winder Runs

A new yarn-conditioning device for applying Hygrolit to yarns during actual winding operations has been announced by Kearny Mfg. Co., Inc., Kearny, N. J. Known as the Surco conditioner, the new device is designed to be installed as individual units and to apply Hygrolit to the entire width of the package during winding. The Hygrolit solution is applied to the winder drive rolls, and the amount supplied can be regulated by adjustment of the feed-line pressure. It is claimed that a thoroughly conditioned and lubricated yarn package with a more balanced moisture content can be obtained.

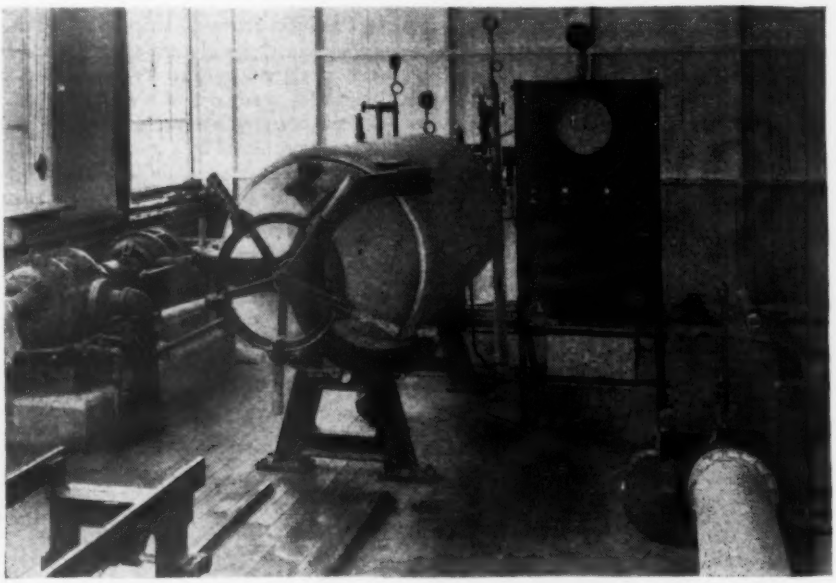
The Hygrolit-liquid supply to the conditioning heads is contained in a storage tank which can be placed under the winder frame or in some other convenient place. All surplus liquid not absorbed is returned to the tanks, it is stated.

Each Surco head is housed so that no moist or wet part is in the open; winders equipped with the device can easily be kept free from accumulated fly, it is said.

Decating Controller Times Operations

An automatic decating controller said to give absolute uniformity of batches, to step up quality of cloth by eliminating variations in finish due to over or under steaming, and to give better timing of operations at more efficient pressures than heretofore possible, has been announced by the Foxboro Co., Foxboro, Mass. The apparatus consists of two timers and other auxiliary equipment for controlling the vacuum pump, vacuum valve, and vent steam valve.

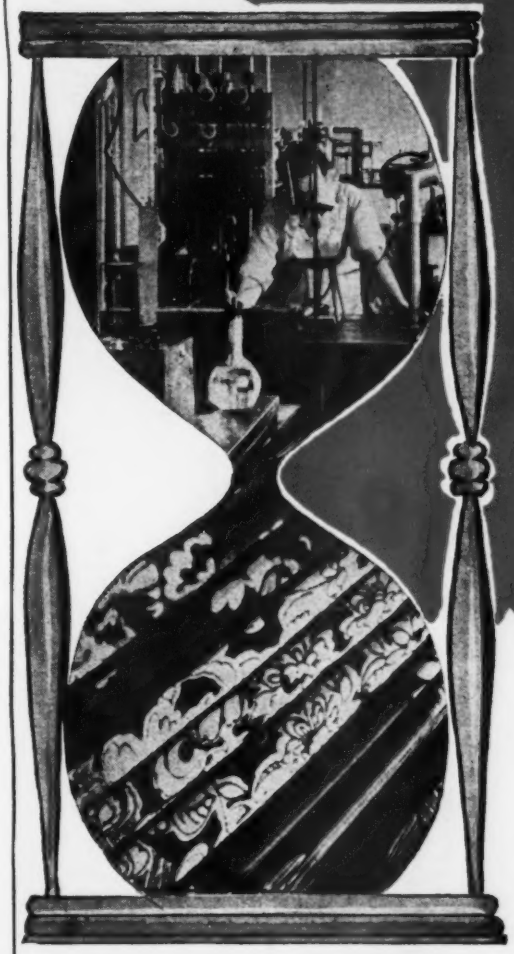
The controller, which was developed in collaboration with the research staff of Arlington Mills, operates as follows: When operator pushes start button, controller pulls vacuum to set point, and steam valve opens; when vacuum again reaches set point, vacuum valve closes and vacuum pump shuts off; when steam pressure in chamber builds up to set point, timer and vent valve start operating; at end of timing period, steam flow reverses, timer and vent valve start operating; at end of second timing period, controller shuts off steam, opens large vent valve and sounds alarm. Variations of this cycle can be arranged, if desired, it is reported.



Automatic decating controller designed to give uniformity of batches. (Foxboro)

25 YEARS

OF CHEMICAL PRODUCTION TECHNICAL AND RESEARCH SERVICE TO THE TEXTILE INDUSTRY



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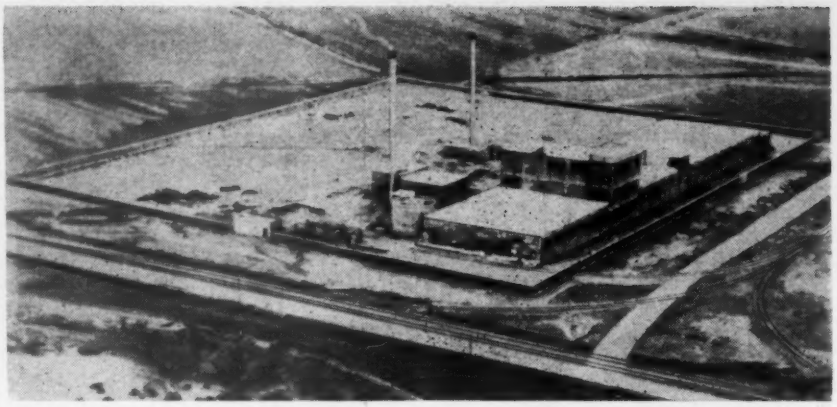

Peruvian plant for spinning continuous-filament and rayon staple, viscose process, started operations last October and should be in full production by the end of 1947.

Peruvian Textile Mills Build OWN RAYON PLANT

HIGHLIGHTS: *American-built unit going into production to meet demands for knitting and weaving yarns—Wide variety can be spun and processed—Capacity of eight tons per day in plant designed by Kohorn.*

AN AMERICAN-BUILT viscose-rayon plant, which was conceived by Peruvian textile mill owners to meet shortages of rayon yarn during the war, will attain full production by the end of this year.

Designed to produce an estimated three tons per day of filament rayon yarn and five tons per day of staple fiber, the new plant is a self-contained unit which will spin and finish many different deniers simultaneously as well as cone or reel the yarn for packing in any form preferred for knitting and weaving operations.

The plant, designed and constructed for "Rayon Peruana S. A.," aims at ending an acute shortage of yarn which has existed in Peruvian textile mills since the first part of the war.

The precariousness of the Peruvian position was brought home sharply to local industrialists when foreign shipments of rayon were halted in 1942. Representation by leading manufacturers led to allocation of 4% of U. S. production to the Latin American market, but this arrangement enabled Peruvian mills to resume only partial production.

In the face of this shortage, the weavers and knitters decided the only answer was to establish a rayon plant in Peru. Subsequent negotiations led to the signing of an agreement with Oscar Kohorn & Co., Ltd., of New York, to construct the viscose filament plant, and machinery was obtained from the U. S. under priority.

Many obstacles in addition to difficulty in securing proper machinery were overcome in construction of the new plant. Excavations were made by hand, and all water was carried over difficult terrain by gangs of laborers. Tackles and windlasses were the only hoisting equipment used.

Most of the labor to operate the plant was trained on the spot by a staff of U. S. technical experts. However, a few key Peruvians were trained at the Kohorn pilot plant in Cleveland.

All yarns are made with the normal amount of twist. Dull, semi-dull, or bright yarns can be spun. Size and number of filament can be adjusted to suit the subsequent textile operations.

The plant has been equipped with double-godet type of pot-spinning machines. They will permit the necessary stretch in spinning for high quality yarns, as well as for the high-tenacity tire-cord yarns used in heavy-duty tires for trucks and airplanes.

The viscose process was chosen by Rayon Peruana S. A. A short aging process, which eliminates the conventional alkali-cellulose aging period is used and is said to give rayon yarns of superior strength, elasticity, and uniformity.

DON'T SWEAT OVER WET PLANT DETERIORATION ...RUST OR FUNGUS

STOP THEM WITH AMAZING

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The Damp-Tex system of painting stops rot, rust, bacteria and fungus growth. Puts a porcelain-like finish on wet or dry wood, metal, concrete and plaster with equal ease and efficiency. Damp-Tex resists steam, 2% caustic solution and lactic acid. Comes in white and colors. Used in over 4,000 plants. Send for details of our trial offer.

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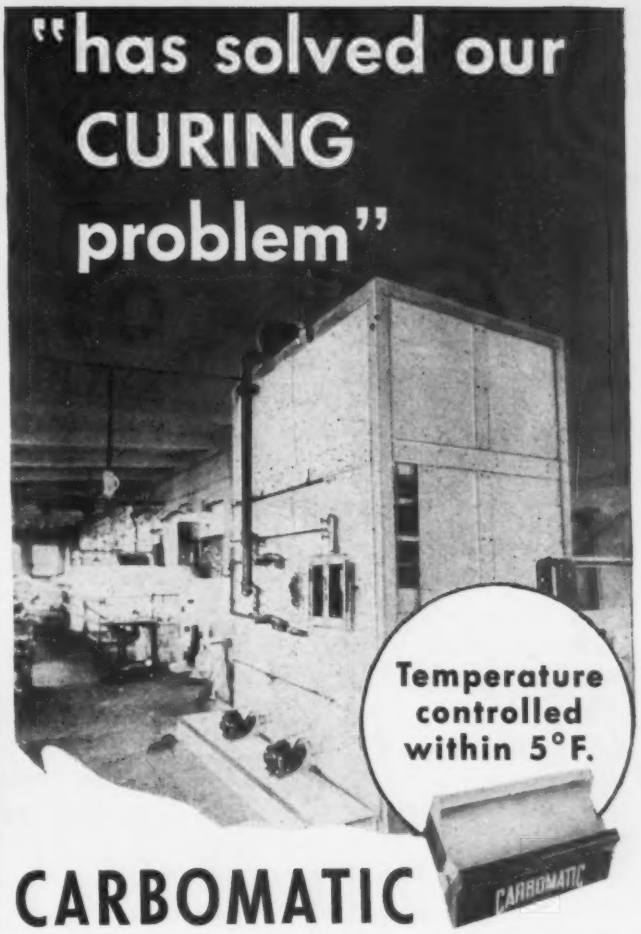

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• "Our curing oven . . . equipped with two of your 42-inch INFRA-RED burners . . . has solved our curing problem. We find it very efficient . . . are able to control the temperature within 5° at all times."

So writes a typical user of twenty-two Carbomatic Infra-Red burners. In curing synthetic resins, for example, Carbomatic *holds* any required temperature (325° to 400° F.). Carbomatic curing box burners insure absolute temperature control up to 600° F. or higher—doing away with superheated steam and inefficient controls, and providing *uniform* heat penetration of either light or heavy materials.

CARBOMATIC—pioneer in Textile infra-red applications—has developed infra-red gas-fired or electric equipment to speed up production and greatly reduce costs in every phase of modern Textile heat-processing.

Write for Bulletin TW-5.

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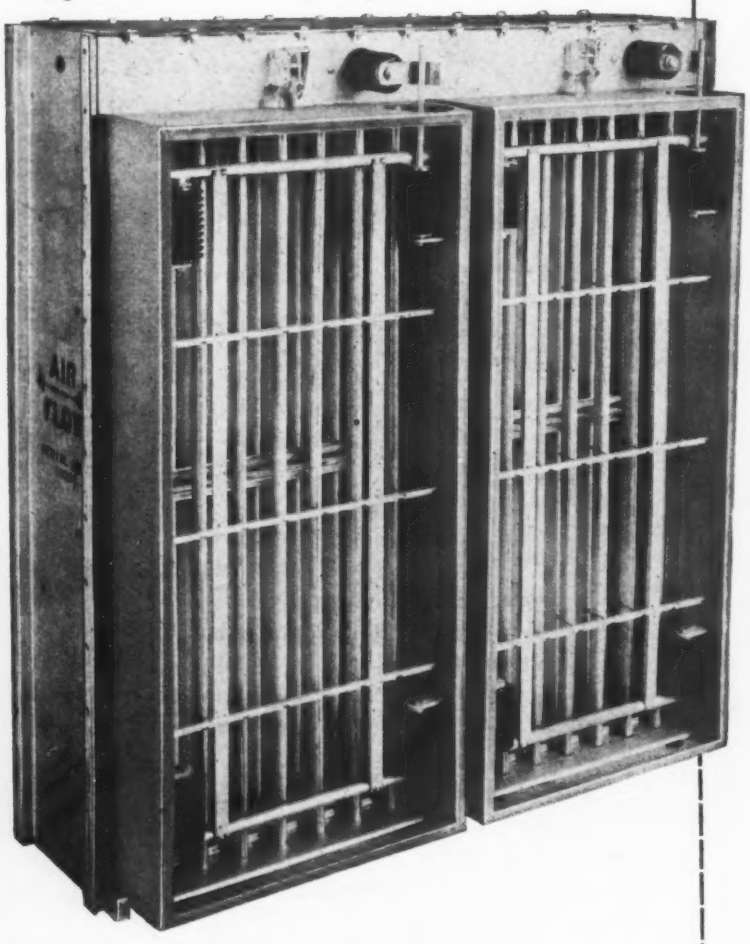

that's definitely an Electro-Airmat job!

SMOKE had air filters "buffaloed" for years. But no more—the Electro-Airmat averages 85% to 90% efficiency as compared to the 0% to 15% rating of ordinary mechanical filters for smoke removal.

That's a big difference and there's a reason. Electro-Airmat combines the best of both electronic and mechanical filtration. Airmat paper, a dry type filtering media used successfully for 20 years, serves as the collector element. Under electrostatic charge every fibre becomes a collecting electrode, attracting and holding minute smoke and dust particles which normally pass through mechanical filters.

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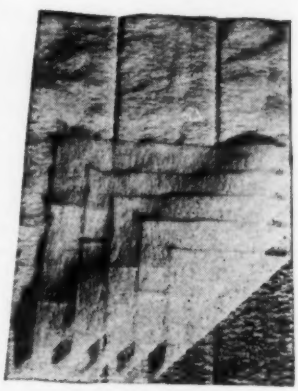

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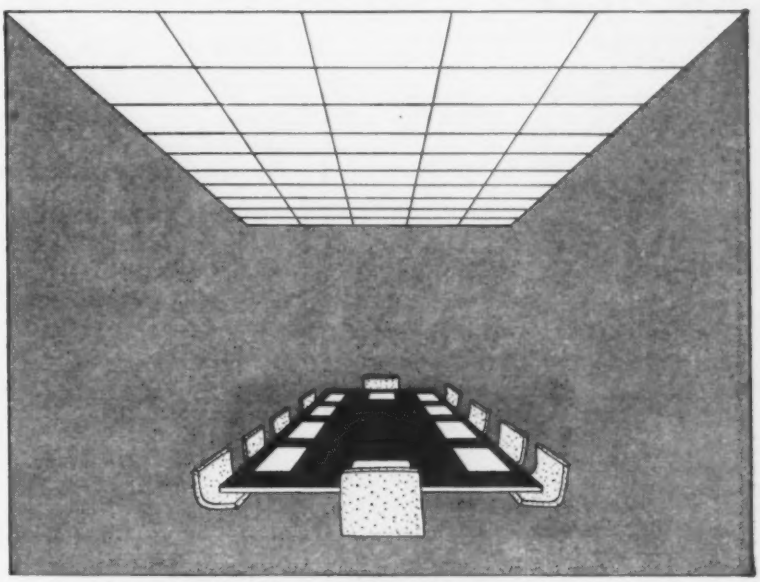

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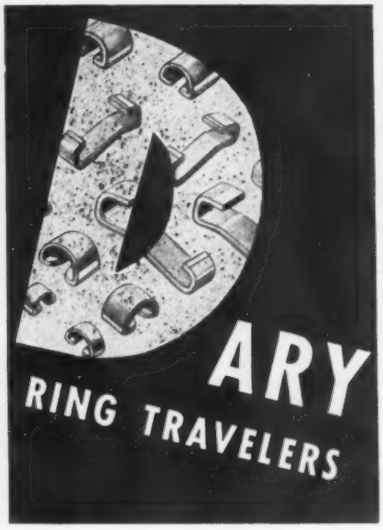

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Spinners and Twisters everywhere have long recognized the familiar blue tin containing genuine Dary Ring Travelers . . . they know that *every* traveler in *every* tin is produced under the famous "Dary Process", the process that assures completely satisfactory performance from *every* traveler!

There is a Dary Ring Traveler for every count or twist of yarn . . . whatever the spinning job, whatever the spinning conditions . . . Dary Travelers in the blue tin spell certain dependability!

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Books of Interest

Fundamental Research on Cellulose

CONTRIBUTION TO THE PHYSICS OF CELLULOSE FIBERS, by P. H. Hermans; Elsevier Publishing Co., 215 Fourth Ave., New York 3, N. Y.; 224 pages, $4.00.

This volume is part of a series on the progress of research in Holland during the war. A considerable part of the work on cellulose here treated has not been published elsewhere, and the latter part of the book is devoted to the experimental procedures which produced the data on which the theories developed by the author are based. The principal subdivisions of the book cover studies of sorption, density, refractive power, double refraction, and X-ray orientation. The experimental work on which the author bases his study was carried out principally in 1943 as part of the research program for the Institute for Cellulose Research at Utrecht. The fibers explored included viscose rayon, Lilienfeld-process rayon, Bemberg, cotton, and ramie. The comparative studies made on native fibers for comparison with the synthetic were made largely on ramie.

New Edition of Economic Survey Is Available

ECONOMICS OF THE COTTON TEXTILE INDUSTRY, by Dr. J. Backman and M. R. Gainsbugh; National Industrial Conference Board, 247 Park Ave., New York 17, N. Y.; 244 pages.

This is a second and thoroughly revised edition of a work first issued in May, 1946. As in the first printing, the publication was made possible through the cooperation and assistance of the American Cotton Manufacturers Association. It presents facts as to wages and hours, profits, taxes, investment, prices, employment, productivity, and related economic yardsticks. Most of the data charted terminates with 1945, but in a few cases 1946 data have been possible of inclusion. The charts, which in the first edition were placed in the back of the book, have in this volume been placed in their proper places in the various chapters. The addition of a complete index makes the work more readily serviceable in its reference function.

Effect of Mechanical Cotton Picking

FACTORS AFFECTING THE PERFORMANCE OF MECHANICAL COTTON HARVESTERS (STRIPPER TYPE), EXTRACTORS, AND CLEANERS, by H. D. Smith, D. T. Killough, and D. L. Jones: Bulletin No. 686 of Texas Agricultural Experiment Station, College Station, Texas; 50 pages.

Results of seven years of tests at the Texas Agricultural Experiment Station and at Lubbock are summarized in great detail. The efficiency of the stripper was found to vary from year to year, between varieties, and between stations. Tall, branchy, wide-spreading plants caused severe losses; while small, short-limbed plants reduced field losses. There was no significant difference in percentage of burs and waste removed from machine-stripped cotton and hand-snapped cotton. These two forms of harvesting, however, ran 1 to 1½ grades lower than hand-picked cotton. Some 20 or more varieties were grown and checked in these experiments.

Other Publications

HEAT TRANSMISSION OF FABRICS BETWEEN PARALLEL METAL PLATES, by H. C. Brown; Series 50, No. 3 of the Bulletin of Lowell Textile Institute, Lowell, Mass.; 12 pages.

STREAMLINING OFFICE METHODS AND LAYOUTS, by J. M. Robins, K. H. Ripnen, J. S. Covell, and B. B. Klopfer; American Management Association, 330 W. 42nd St., New York; $1.00, 48 pages.

MANUAL OF EMPLOYMENT INTERVIEWING, by Frances S. Drake; American Management Association, 330 W. 42nd St., New York; $2.25, 78 pages.

FINISHES FOR ALUMINUM, 2 vols., Section I and Section II; Reynolds Metals Co., Dept. 27, 2500 So. 3rd St., Louisville 1, Ky.; 228 pages total of both volumes (Section II is in loose-leaf form and will be added to as new shop data becomes available), $2.00.

NAM LOOKS AT CARTELS; National Association of Manufacturers, 14 W. 49th St., New York 20, N. Y.; 64 pages.

JUTE AND CANVAS TRADES YEARBOOK AND DIRECTORY for 1946; British-Continental Trade Press, Ltd., 222 Strand, London, WC2, England; 136 pages, 10 shillings.

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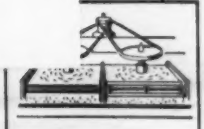

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Titre	8—11° C.	3—5° C.
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Sap Value	195—199	195—199
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	0-20 White Elaine	0-21 Low-Titre White Elaine
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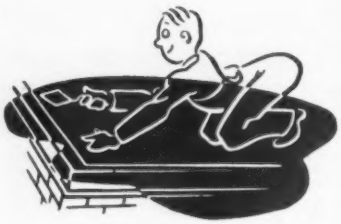

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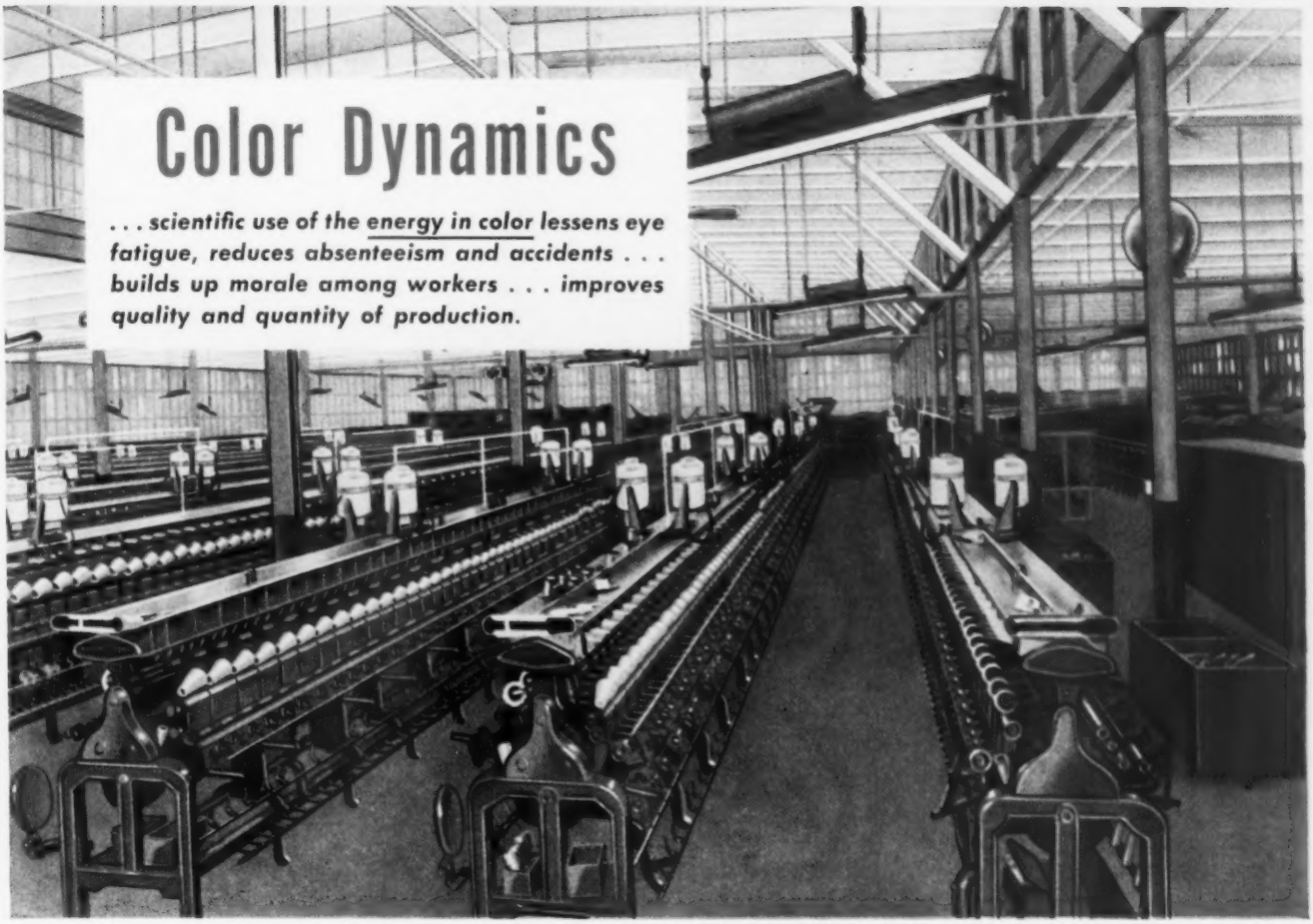
News of the month

Alabama Mill Men Meet. Deploring the "utter recklessness of present assaults on the price structure," Dr. C. T. Murchison, president, Cotton-Textile Institute, declared before the annual meeting of the Alabama Cotton Manufacturers Association at Biloxi, Miss., Apr. 14, that such "crowbar methods" could easily lead to disastrous consequences. In a period of rapidly breaking prices, he pointed out, public confidence in values melts away, buyers are fearful of making commitments unless sure that the bottom has been reached, selling operations are brought to a standstill, heavy losses are suffered, inventory values shrink, production is curtailed, unemployment appears everywhere, breadlines begin to form, wage structure cracks as did the price structure. "Why have wages gone up so fast and so far," he asked, "except to cover these higher prices." The present economic situation, he declared, is one that any country should be proud to have. Any other country possessing our situation would revel in happiness and pray to the Lord that it be continued forever, he added. The president's annual address was delivered by C. M. Elrod, president of Boaz Mills, Inc., and vice president of the association in the absence of President Homer M. Carter, of Pepperell Mfg. Co. Dr. William P. Jacobs, president of ACMA, addressed the session, as did Dr. Burt Johnson, of the Institute of Textile Technology. The latter spoke on stream sanitation.

BIF Products. Textile exhibitors were the largest group at the British Industries Fair which opened May 5 in London, England. Of particular interest was a new cotton cloth that achieves a permanent "luster-face" without being coated. It, reputedly, is water repellent and rot resistant yet retains fabric qualities. Another exhibit of textile interest was a new system of spraying fibers on wood, metal, paper, plastic, glass, or other surfaces to give a soft fabric-like appearance.

Accelerated Depreciation. (*From McGraw-Hill Washington Bureau*)—The U. S. Tax Court so far has not given any formal opinions on claims for accelerated depreciation due to intensive war use of plant and equipment. Recent informal opinions indicate the court can be persuaded by overall statistical evidence of increased activity, whereas the Commissioner of Internal Revenue still turns a fishy eye on all but specific proof that the life of certain equipment has in fact been shortened by unusual beating. It is safe to conclude from recent cases that the court (1) recognizes the validity of allowing abnormal depreciation due to intensive use of facilities; (2) will accept overall data showing increased activity as evidence of such use; (3) gives credence to informed testimony on plant conditions; and (4) may allow accelerated depreciation on all productive facilities in a plant. So far, the Commissioner of Internal Revenue has denied all claims for accelerated depreciation on a plant-wide basis. He has allowed larger depreciation on certain machines when the taxpayer has proved conclusively that their useful life was shortened by intensified use. The commissioner's position is that accelerated depreciation will not be allowed where obsolescence, inadequacy, or decay control the life of the property; that any modification of normal deprecia-


Color Dynamics
. . . scientific use of the energy in color lessens eye fatigue, reduces absenteeism and accidents . . . builds up morale among workers . . . improves quality and quantity of production.

Mill building of the Aberfoyle Manufacturing Co., Belmont, N. C., after it was repainted according to the principles of COLOR DYNAMICS.

Praise for Pittsburgh's New Painting System from Aberfoyle Mills' Plant Manager!

IT IS not surprising that production executives and workers alike have expressed great interest in Pittsburg's COLOR DYNAMICS.

This new method of painting is based upon the scientific fact that the *energy in color* has a definite influence upon the physical, mental and nervous systems of human beings.

Actual experiences have shown that in plants which utilize COLOR DYNAMICS, labor and management have benefited alike. Continuity of employment is increased, efficiency of operation is improved. Quality and quantity of production are maintained at high levels.

Characteristic of the benefits produced by COLOR DYNAMICS are the results in the plant of the Aberfoyle Manufacturing Company of Belmont, N. C.

"We painted our mill buildings according to your principles of COLOR DYNAMICS," writes W. H. Crenshaw, plant manager. "Such use of specific colors has many advantages. It is helping us to maintain higher employee morale, a good safety record and efficient, improved production throughout our organization."

Hundreds of plants in many industries have enjoyed similar experiences in recent years. Where these principles have been applied, workers' eye fatigue has been lessened. Absenteeism and the risk of accidents have been reduced. More work per man-hour and more man-hours per man have resulted.

Why not try COLOR DYNAMICS in your plant—on a machine or two or in one department. See the difference it makes.

Write on your company's letterhead for a FREE copy of our new and enlarged booklet which fully explains the principles of COLOR DYNAMICS and how many organizations have made use of them. Pittsburgh Plate Glass Company, Paint Division, Dept. TW-5, Pittsburgh 22, Pennsylvania.

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tion will be confined to those items whose useful life depends on wear and tear; that accelerated depreciation is allowable only to the extent that maintenance fails to arrest depreciation. These factors themselves are enough to block the allowances normally sought.

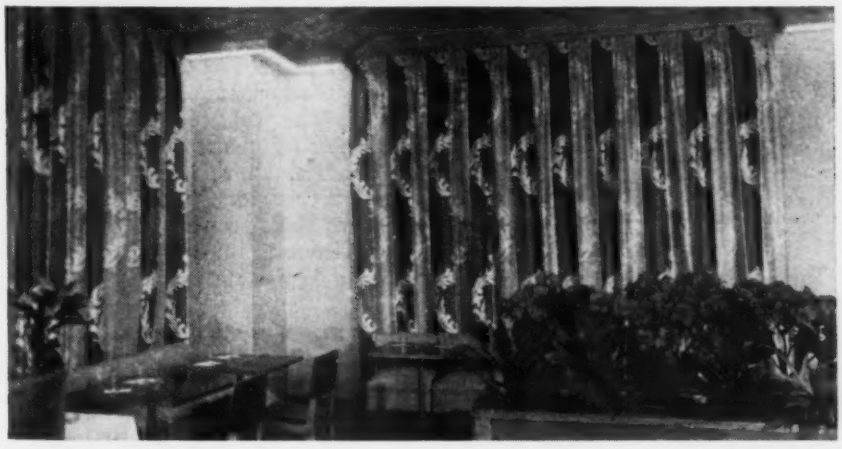
Japan's Textile Trade. (*McGraw-Hill World News*)—Sweden has ordered 11,500,000 yd. of Japanese cotton textiles, and is the first western nation to place an order for such goods. Shipment is for April and May. Other orders come from Siam, the Philippines, and Malaya. Japanese cotton-textile exports this year may pass 400,000,000 yd. Before the war, they had reached as much as 3,000,000,000 yd. Japan exported 86,427 bales of raw silk from August, 1945, to December, 1946, of which 84,475 bales went to the United States, 1,212 to Great Britain, 700 to Australia and 40 to New Zealand. Silk fabrics shipped during this period reached 900,000 yd. of which more than 700,000 went to the U. S.

Small Rise in Wool. Because of an increase of 8 points in the parity index, a small upward adjustment was made in the selling price of wool owned by the Commodity Credit Corp. on Mar. 29. The average increase is 2 to 3¢ per lb., clean basis. There were six bills before Congress early in April relating to government support of wool prices. Boston wool dealers support the Saltonstall-Lodge and Herter bills which are identical and provide 90% of parity as a floor, which is the same or better protection than is given 160 other agricultural commodities, excepting cotton which gets 92½%. The growers however support bills providing a "comparable" price which at present is about 23% higher than the "parity" price.

Carpet Men Meet. The Institute of Carpet Manufacturers of America, Inc. held a full membership meeting in New York Apr. 16. Dr. Lawrence C. Stockley, New York University, School of Retailing, analyzed "The Carpet Institute's Marketing Program." J. G. Schnitzer, chief of the Textile & Leather Division, Office of International Supplies, Department of Commerce, spoke on "Prospects for Carpet Wool Supplies," and H. V. Greenough, president of the Soft Fiber Institute, discussed "The Jute Situation." Dr. Gustav Stolper, economist, addressed the luncheon.

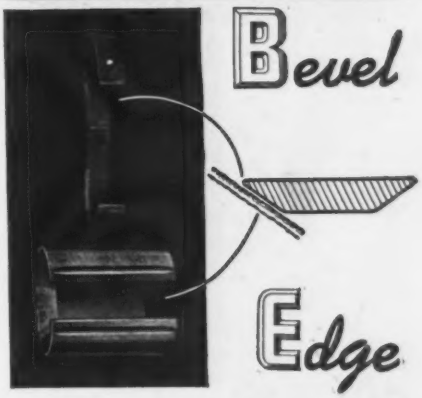
Army Finally Gets Its Serge. The Army's efforts to procure 10,700,000 yd. of 18-oz. serge for uniforms finally met with success in early April. Since last June, when the original bids for 10,700,000 yd. of serge were issued, the Army had been insistent but unsuccessful in its efforts to obtain the desired fabric. Recently, announcement was made that a "fill-in" quantity of woolen covert cloth would be accepted to make up the Army's minimum uniform requirements. The invitation for bids on 3,000,000 yd. of covert cloth have now been cancelled.

Emphasis on Gage. Asserting that gage has been over-emphasized in hosiery, Edward L. Winpenny, vice-



FIRE-RESISTANT DRAPERIES made by Plymouth Fabrics, Fall River, Mass., were recently hung in the new dining room of the Hotel Sherry-Netherland, New York. These fabrics are woven of Fiberglas and flame-proofed cotton yarns and their use reduces the fire hazard in places of public assembly. Combinations of incombustible yarn, such as Fiberglas, with other synthetic or natural yarns which are inherently slow burning or have been chemically treated to produce that property, are suitable for draperies of this class. There will soon be offered a line of Fiberglas-and-wool draperies. The patterns are applied by screen printing. Turner Halsey Co., New York, is selling agent for Plymouth Fabrics.

U. S. RING TRAVELERS



Ideal for BLENDS

Bevel-edge travelers are especially useful in running blended yarns. The exclusive anti-friction design is a great aid in keeping end breakage to the minimum, while at the same time helping smoother running and more uniform tension. Our representative will gladly call and recommend appropriate sizes and weights.

A Style and Size for Every Textile Fibre

"U. S." offers a COMPLETE traveler Service—a complete line suited to every fibre and operation—complete engineering service assisting you in traveler selection and maintenance for maximum spinning and twisting production.

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PROMPT SERVICE CALLS

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"U. S." Men give you Prompt Service!

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4 ways to stretch your peroxide with
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Star is brilliantly clear, with no floc to speed up peroxide decomposition.
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Star is stable to dilution and heat so that it does not "break" to cause decomposition or deposits.
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Star has reserve alkali that extends the working life of the bleaching solution.
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For more than 85 years, DRAPER has been providing better soaps for better fabrics.

The Textile Industries long have known that "Depend on DRAPER" has real significance, for the users of DRAPER Dependable SOAPS are producing better cloth.

Write for a demonstration of DRAPER SOAP *quality*.

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president in charge of sales of Gotham Hosiery Co., addressing 250 members and guests of the Fashion Group at a luncheon-meeting in New York, predicted that denier, color, and style would become increasingly important. Scoring the heavy emphasis put on 51-gage nylons, Mr. Winpenny said that "up to now very little style or fashion has been put into stockings. This . . . throws the retailer into a competitive position with his neighbor on the unhealthy question of who has more 51-gage stockings for sale. In view of the fact that the industry today is producing less than 15% of its total production in 51-gage, this is a poor battle-ground on which to fight the war of competition. Actually denier is of more significance in determining sheerness than is the gage." The industry, he added, is experimenting with various yarns, such as 10-den. monofil nylon and 15-den. multifil.

Australia Wool Men Decry Tariff Cut. American wool growers have received unexpected and valuable assistance from Australian wool authorities and wool growers' organizations in their fight to prevent reductions in existing American wool tariffs. The National Wool Growers Association recently made public a statement by F. Eric Hitchins, president of the Australian Wool Producers' Federation of Perth, Western Australia, and member of the Australian Wool Realization Board, declaring that Australian growers will not be a party to any action detrimental to their fellow producers in the U. S. A.

Safety Award. A textile item—the Tex-Knit Burnproof Ironing Cover made from U. S. Rubber Co. Asbeston—was the winner of the 1947 safety award, presented by Lewis & Conger, New York retail merchants, for the outstanding product that became commercially available in 1946 to contribute to safety in the home. The cover is made by Textile Mills Co., Chicago.

Flammability Test. Reporting on activities of the Flammability Committee of the American Association of Textile Chemists & Colorists, Dr. Herman E. Hager, chairman, states that the National Bureau of Standards has adopted as a commercial standard the AATCC method and machine for testing flammability of apparel fabrics, and the ASTM also has expressed a desire to adopt this method. Recently, the machine was adopted by the Fire Marshal of the State of California. To date, 54 of the machines have been purchased by textile mills, testing laboratories, and others.

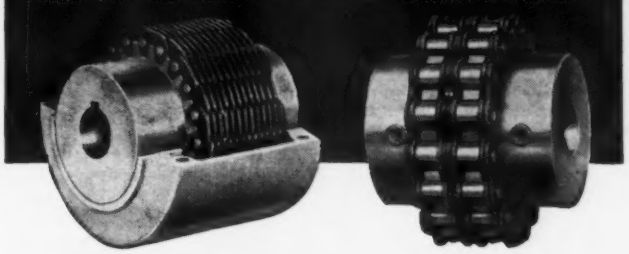
To Study German Synthetic Staple. Dr. Walter J. Wyatt, of the National Bureau of Standards, is in Germany to examine and coordinate documentary materials on the German synthetic-staple industry for the Office of Technical Services. During his three-month visit, Dr. Wyatt will also study German synthetic asbestos processes.

Freight Rates Discussed. At a hearing in Boston Apr. 24, before the rate committee of the New England Freight Association, a representative of the National Association of Cotton Manufacturers suggested an increase of 3¢ per 100 lb. by rail on cotton textiles between New England mill cities and New York on less-than-carload lots, dependent on similar action by the railroads from other points nearer New York, such as New Jersey and parts of lower New York state. An alternative suggestion was that carload rates be established on textile shipments to be consolidated at originating points for shipment to New York, where these would be consigned to a single trucking concern for distribution in New York City. No further hearings are scheduled. Representatives of the American Woolen Co., and the Sanford Mills also appeared. The first meeting on l.c.l. rate increases on textiles was held in March.

One Nylon Chemical From Farm Wastes. Development of a chemical process to use such agricultural by-products as corncobs, cottonseed hulls, and the hulls or bran of oats and rice in the making of nylon was discussed by Dr. Oliver W. Cass, of E. I. du Pont de Nemours & Co., at the March meeting of the National Farm Chemurgic Council, at Oklahoma City, Okla. The cobs, hulls, and other cellulosic materials are the sources of a chemical known as furfural. The new process turns furfural into adiponitrile, later converted into hexamethylene diamine, a chemical important in making nylon.

Government Looks Into Ramie. A research project, designed to provide better information on ramie cultivation and the processing and utilization of ramie fiber for potential growers, processors, and the textile industries is being sponsored by the Industrial Research & Development Division of Office of Technical Services, Department of Commerce. Under a contract with the Florida Board of Control, ramie will be planted and grown.

MORSE ROLLER and SILENT CHAIN COUPLINGS



Flexibility in a rugged ALL-STEEL design!

Morse Flexible Roller and Silent Chain Couplings permit slight shaft misalignment. All-steel, machined all over—rugged, durable, easily aligned and readily disassembled, they transmit power smoothly with minimum attention. Send for further information.

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MORSE MECHANICAL POWER TRANSMISSION PRODUCTS

WHEN IS ONE MULE 13 TIMES Better?

WHEN IT'S A JOHNSON AND BASSETT MULE, WHICH HAS 13 ADVANTAGES OVER RING SPINNING FRAMES AS FOLLOWS: **1.** Up to 50% saving in labor. **2.** Up to 65% saving in H.P. per equal number of spindles. **3.** Up to 50% saving in floor space per equal number of spindles. **4.** Up to 67% saving in investment per comparable capacity. **5.** The J & B Mule will handle a much coarser roving than a frame, thereby increasing production at the card by 15% to 20%. **6.** The J & B Mule produces a true woolen yarn — superior in strength, elasticity, loftiness, roundness and uniformity of size and twist to that produced by frame spinning. **7.** It permits inspection of the thread. **8.** It will successfully spin short staple roving which will not hold together on a frame. **9.** Spindle for spindle, it will produce as much yarn as a frame. **10.** Its cost of upkeep is exceptionally low. **11.** The J & B filling package does not require rewinding for an automatic loom. **12.** Changes for spinning different types of yarn on the J & B Mule are easily and quickly made. **13.** Mule bobbins cost less than frame bobbins.

Complete details and prices on request.

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Founded 1865

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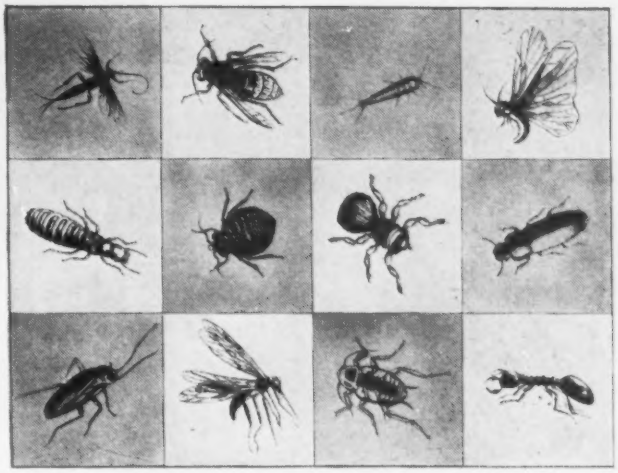
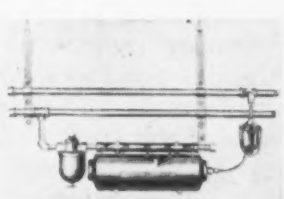


. . . you'd like to give the "AIR" Forever!

Do your special insect pests crawl or fly? Thrive on Food or Fabric? Run rampant in a midget-sized cubicle or nest in the hard-to-reach places of a tremendous factory? Get rid of them with the West Atomizer —an effective scientific method of insect control. Designed to eliminate all pests *wholesale* with a fast "positive-kill."

A permanent installation which shortly pays for itself in time and labor saved (plus the tremendous advantage of complete coverage) the West Atomizer is perfected for efficient and effective use with compressed air. Just turn on the air valve and it *shoots out* a deadly fog of insecticide which reaches into the tiniest cracks and crevices. *Does its lethal magic as quickly in a mile-long plant as in a small store room.* Dispenses a "dry" mist so it won't wet floors, walls, or product if used as directed.

With the West Atomizer, use Vaposector Fluid—one of West's complete line of effective insecticides, specially prepared to help lick your insect problem. Vaposector is a concentrated, odorless insecticide—and is safe to use. Why not consult one of over 475 trained West representatives at once?



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Time for a

Spring Check-up . . .

on the plan that delivers Peace of Mind

THANKS to the work of patriotic volunteers, the U. S. Savings Bonds program has carried America a long way up the road to economic security.

During 1946, in spite of all the problems and uncertainties the nation faced, sales of Savings Bonds *exceeded redemptions* by $1,389,216,000. The success of this great sales operation has helped stem the tide of inflation, has reduced public debt holdings of the banking system, and has given millions of citizens a stake in their country and a profitable investment in their own futures.

Yes, we've come a long way—but the trip isn't over! Now is the time to check up on your Payroll Savings Plan. Make sure that all your new employees are familiar with its advantages. Remind *all* your employees that there's no easier, surer way to build their own futures—and America's—than by buying Bonds regularly through the Payroll Savings Plan. Every $3 invested pays $4 at maturity!

For any help you need in conducting the Payroll Plan, call on your State Director of the Treasury Department's Savings Bonds Division.

New Savings Bonds Plan won't affect the P.S.P.

SOON the Treasury Department and the banks of America will make it possible for farmers, doctors, and other self-employed people to participate in "automatic" Bond buying by special arrangement with their banks. This extension of the Savings Bonds program is not a partial payment plan and is intended *only* for people who are not in a position to take advantage of the Payroll Savings Plan.

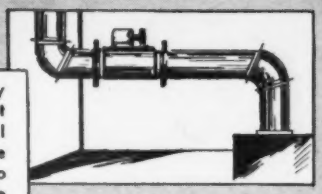
The Treasury Department acknowledges with appreciation the publication of this message by

TEXTILE WORLD

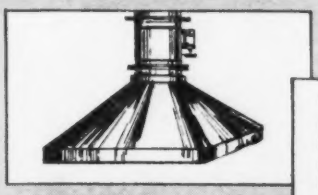
This is an official U. S. Treasury advertisement prepared under the auspices of the Treasury Department and The Advertising Council.

AXIAL FLOW FANS-

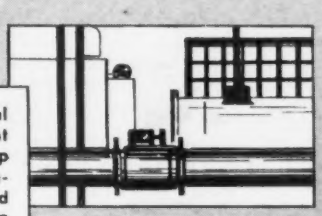
WHEN TO USE THEM TO ADVANTAGE



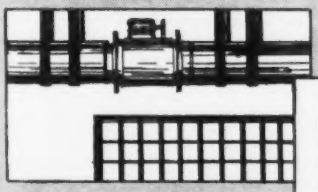
WHEN the fan fits naturally into the middle of a straight duct system. Here the Axial Flow type is installed with the least disturbance, and to special advantage when the system is overhead.



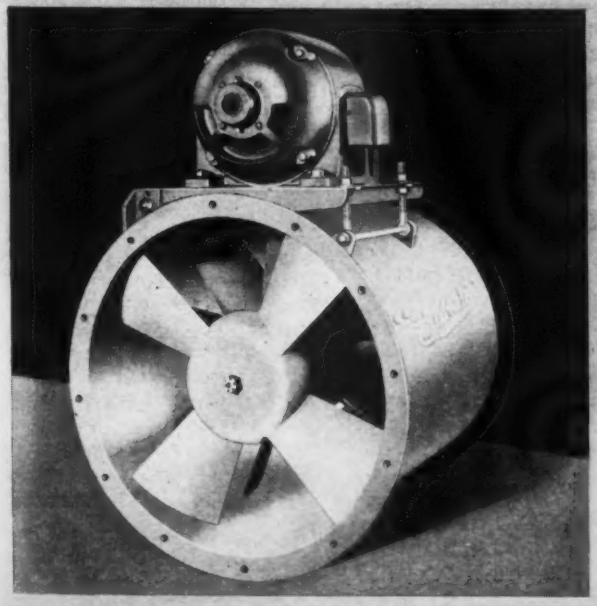
WHEN a vertical air removing system is used — as in exhausting from a hood or paint spray booth—the Axial Flow Fan can be set directly over the opening with the duct straight up.



WHEN space is limited Axial Flow Fans take all straight connections (which take up the least room)—while Centrifugal fans require curved connections, which take up valuable room.



WHEN you have a fan-supporting problem, but still need high air volume. Axial Flows are lighter and smaller than Centrifugals—are more easily supported from ceilings or walls.



Axial Flow Fans fit very well into many industrial and commercial applications where space-saving is important, where an expensive platform can be eliminated, and where straight-line air flow is desirable.

In other cases, they offer no real advantages over Centrifugals and for that reason, Buffalo offers both types.

Bulletin 3533-B gives full details and ratings on Axial Flow Fans. Bulletin 3339 gives the same information on Type LL Centrifugal Fans. Write for copies of both for your files.

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"Buffalo" AXIAL FLOW FAN

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FIRST CHOICE IN APRON LEATHERS

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Long Draft Apron Calf

It's Better Naturally

THAT'S WHY, WHERE QUALITY COUNTS, CALFSKIN SPINS THE YARN

A. C. Lawrence Leather Company, Peabody, Mass. Manufacturers of Lawrence Spinna Calf—top name in roll coverings. Represented by H. H. Haney, Greenville, S. C.

A. C. LAWRENCE LEATHER CO. PEABODY MASS. TEXTILE LEATHERS

NEWS ABOUT Suppliers

Universal Winding Co., Providence, R. I., has purchased the Atwood Div. of Farrell-Birmingham Co., Stonington, Conn. The division will be operated with its present personnel.

Wyandotte Chemicals Corp., Wyandotte, Mich., has made the following changes in the sales organization of its Michigan Alkali Div.: John M. Norcott has been transferred from Detroit territory to the Pacific division. Raymond C. Leonard replaces Mr. Norcott as Detroit territory sales representative. Robert K. Smith is now sales representative in the Cincinnati territory. Fritz M. Zorn has been transferred from the Research Department to the Market Research Department.

Sterling Ring Traveler Co., Fall River, Mass., has appointed M. Hope Cranford, recently with the Springstein plant of Springs Cotton Mills, to be its representative in South Carolina and Western North Carolina.

George W. Egan, Woonsocket, R. I., dealer in new and used machinery, is now on an extended trip to South America. He plans to visit Peru, Venezuela, Argentina, Uruguay, and Brazil during the course of his six-week tour.

Gastonia Roller, Flyer & Spindle Co., Gastonia, N. C., has elected F. B. McDonald as president to succeed C. E. Honeycutt who becomes chairman of the board.

National Oil Products Co., New York, has changed its company name to Nopco Chemical Co. in order to identify it more readily with the chemical industry.

Willcox & Gibbs Sewing Machine Co., New York, has elected Miss Margaret Catherine Minform, as assistant secretary of the company. She continues as assistant to the president and also in charge of all women personnel.

JOHN H. MATTHEWS, who has been elected vice president of Raybestos-Manhattan, Inc., in charge of the Manhattan Rubber Division, Passaic, N. J. He joined the company in 1914. He became assistant factory manager in 1940 and in 1942 became assistant general manager of the Manhattan division.

Pittsburgh Plate Glass Co., Pittsburgh, Pa., has appointed Guy Berghoff its director of public relations to assume direction of all the company's advertising activities. Columbia Chemical Div. of the company has named Walter T. Johnson as New York district sales manager, Glenn W. Green as Chicago sales representative, and Daniel R. Moser as Minneapolis representative.

Monsanto Chemical Co., St. Louis, Mo., has opened a new plant at Springfield, Mass., for manufacture of the company's textile-treating chemical known as Resloom, which imparts shrinkage control, muss resistance, and stability to woolens, rayons, cottons, and blends. The Springfield plant will have a yearly output capable of processing 50,000,000 yd. of fabric. Members of the Northern New England section of American Association of Textile Chemists & Colorists were recently taken on an inspection tour of Monsanto's new laboratory, now nearing completion, in Everett, Mass. The visitors were the guests of Dr. D. H. Powers, director, and George Linberg, sales manager, of Monsanto's

textile chemicals department. Mr. Linberg is chairman of the NNE section of AATCC. Monsanto's new sales office in Boston was opened last month to handle regional sales of organic chemicals, phosphates, alcohol, and dry ice, and to serve as a divisional branch for the company's export sales and shipping department.

The Mathieson Alkali Works, Inc., New York, N. Y., estimates the total cost of its present plant-modernization and expansion program at $9,500,000. This estimate does not include alteration of the recently acquired government ammonia plant at Lake Charles. The program, which was started in 1945, will probably be completed in late 1947. Production of caustic soda and soda ash, both of which are in short supply, will be substantially increased.

Bryant Chemical Corp., No. Quincy, Mass.—Joseph A. Bryant, active for over half a century in the textile industry, has joined his sons in the Bryant Chemical Corp., making his headquarters at the company offices in Quincy.

Brown Instrument Co., Philadelphia, has established a branch office in Baltimore. W. J. Law, formerly with H. P. Rogers, agent will be in charge of sales, assisted by J. F. Maienshein, with headquarters at 2100 St. Paul St.

Carbide & Carbon Chemicals Corp., New York, is erecting a 10-story building to serve as administrative, engineering, and operating headquarters at its South Charleston, W. Va., location. The new building will accommodate some 900 employees.

Veeder-Root, Inc., Hartford, Conn. has elected Arthur E. Kallinich and David J. Post as vice presidents and Andrew J. Rebmann as assistant treasurer. Mr. Kallinich has been sales manager since 1944. Mr. Post has been assistant to the president also since 1944.

Carl Endlein, Atlanta, Ga., resigned recently as district manager for C. J. Tagliabue Div. of Portable Products Corp., and has established his own business as manufacturers' representative, covering Georgia, Alabama, and Tennessee.

C. C. CHAMBERLAIN, general sales manager of Jenkins Bros., New York, who has been elected a vice president of the company. He joined the company in 1929 as an assistant in the advertising department, was appointed advertising manager in 1932, and advanced to publicity manager in 1940. He was named general sales manager in 1942, and was recently elected to the board of directors.

He will continue to make headquarters at 1743 Candler Building, Atlanta 3. He will carry a complete line of Gotham Instrument Co.'s control instruments as well as the scientific instrument line of the American Instrument Co.

Farrel-Birmingham Co., Inc., Ansonia, Conn., has appointed D. K. MacLean export manager for all lines of machinery manufactured by the company's four plants. He will make his headquarters at the main office at Ansonia.

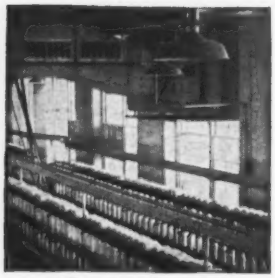
Bailey Meter Co., Cleveland, Ohio, has elected H. M. Hammond, general sales manager, and P. S. Dickey, chief engineer, as vice presidents. Each will continue to head up his department of the business.

Diagraph-Bradley Stencil Machine Co., St. Louis, Mo., has established a Philadelphia office at 629 No. 19th St., under the direction of Wm. J. Eilerman, formerly of the company's New York office. Stocks will be carried in Philadelphia.

The Carborundum Co., Niagara Falls, N. Y., has elected H. K. Clark, formerly executive vice president, to be president of the company. He succeeds Arthur Batts, who has been elected chairman of the board. Edwin R. Broden has been elected vice president in charge of operations, a member of the board of directors, and a mem-

TOP NAME IN ROLL COVERINGS
LAWRENCE
Spinna Calf
It's Better Naturally
THAT'S WHY, WHERE QUALITY COUNTS, CALFSKIN SPINS THE YARN

Own Your Own Weather



Air enters through Airchanger unit

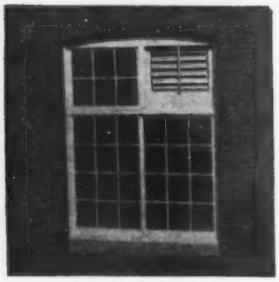
Regain higher and more dependable. Greater strength and more uniformity in numbers.

Or through central station air washer

Drafting of Fibers smoother and more compact. Waste and fly reduced to a remarkable degree.

Propelled through ducts

Fewer Breaks. Not as many stops or piecings. Not as many adjustments. Cleaner and very much more comfortable rooms.



Automatic Shutters let heat out

Better Product. And very often as much as 2% more production.

Certified **CLIMATE** with its exclusive method of control has been known to PAY FOR ITSELF in a year, or less.

Parks-Cramer Company

Fitchburg, Mass. Charlotte, N. C.

ber of the executive committee of which President Clark becomes chairman. Otis Hutchins is retiring as technical director after 35 years of service because of ill health. He is succeeded by Harry C. Martin, previously his assistant.

Manhattan Rubber Div. of Raybestos-Manhattan, Inc., Passaic, N. J., has appointed Asbestos Co. of California, 941 16th St., San Francisco, to represent it in the San Francisco area. The Asbestos company will carry a stock of belting, V-belts, hose, and other industrial rubber products. It will also have the advantage of the newly established Raybestos-Manhattan warehouse at 131 Mission St., San Francisco.

The Stanley Works, New Britain, Conn., has elected Harrison C. Bristoll as vice president of the company. He is general manager of the Steel Strapping Div.

Allis-Chalmers Mfg. Co., Milwaukee, Wis., has adopted a new regional set-up for the field organization of its general machinery division. In New England, A. B. Frost and R. H. Porterfield are managers of the New Haven and Providence district offices, respectively, reporting directly to W. F. Taylor, Boston, manager of the region. In the Southwest, W. R. Horrigan, Aubrey Phillips, E. R. Hury, L. G. Park and R. I. Moore are managers of the Amarillo, Houston, San Antonio, Shreveport, and Tulsa district offices, respectively, reporting directly to J. L. Pratt, region manager, who has been succeeded as manager of the Dallas district office by H. L. Reynolds. In the Southeast, J. J. Greagon, William Parker, J. W. Roberts, G. H. Hoffman, A. R. Knauss, Joseph Bronaugh, R. F. Muller and A. D. Robertson are managers of the Birmingham, Charlotte, Chattanooga, Knoxville, Memphis, Miami, New Orleans, and Tampa district offices treporting directly to D. S. Kerr, manager of the region, who is succeeded as manager of the Atlanta district office by Charles F. O'Riordan.

Wheelco Instruments Co., Chicago, Ill., has elected Elmer Schneider to a newly created position of vice president and director of engineering. Joseph A. Reinhardt will become plant manager and assume responsibility for all manufacturing operations.

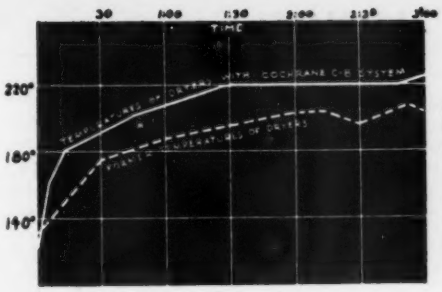
EDGAR F. SCHAEFER, formerly executive vice-president of Gardner-Denver Co., Quincy, Ill., who has been elected company president, succeeding H. G. Myers, who becomes chairman of the executive board, Mr. Schaefer came to the company in 1919. He was elected vice president in 1926, and became executive vice president in 1942.

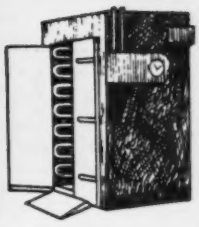
Johns-Manville Corp., New York, has purchased the factories and other properties of Goetze Gasket & Packing Co., Inc., New Brunswick, N. J., manufacturers of metallic gaskets. Goetze gaskets will be produced as formerly at the Goetze plant and sold by Johns-Manville under the Goetze name.

Package Products Co., Charlotte, N. C., recently organized, is now in operation specializing on printed cellophane for the textile and food industries. Its equipment includes a four-color press. T. J. Norman, Jr., is president; A. H. Murrell, Jr., general manager; Don Davidson, Jr., secretary; and Al Hodges, superintendent.

Prufcoat Laboratories, Inc., Cambridge, Mass., has appointed the United States Rubber Export Co., Ltd., as exclusive export distributors for Prufcoat protective coatings and Pruftite transparent waterproofing.

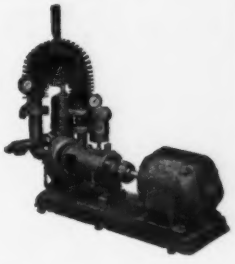
Air Reduction Sales Co., New York, N. Y., has appointed Herman Van Fleet, Jr., as manager of its New England district, with headquarters at 122 Mt. Vernon St., Boston. He will also be in charge of the Air Reduction plants at Boston, South Portland, Me., and Central Falls, R. I. Em-





New Condensate Return System Increased Average Temperature of Dryers 18°F. . . . Giving 17% More Production and Saving 18% in Fuel

This experience of a dye works in Chicago is typical of results being obtained everywhere by firms who are discarding old-fashioned methods of draining condensate and who are installing the Cochrane C-B System of Condensate Return. The C-B System with the Jet-Loop Pump shown here, drains the steam process equipment, and returns the condensate to the boiler in a closed circuit at almost boiler temperature and pressure. Entrained air is also completely eliminated. . .



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C-B SYSTEM

CONDENSATE RETURNED TO BOILERS AT HIGH PRESSURE AND HIGH TEMPERATURE

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Earn a Manufacturing Profit By Using the Best Machinery and Supplies

DUSTERS
PICKERS
CARDS
MULES
WOOLEN SPINNING FRAMES
SPOOLERS
DRESSING FRAMES
NAPPERS
CARD CLOTHING
NAPPER CLOTHING
GARNETT WIRE
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NORTH ANDOVER, MASS.

THE ACCEPTED STANDARD

something for the ladies . . . . .

It started, we're told, because women operators had difficulty turning the metal hand wheels on mill machines of all types. Hubbard plywood hand wheels, relatively large in diameter, provided the necessary leverage women workers required. Experience now shows it's the preferred type of wheel. It makes work easier . . . actually lasts longer than the average metal wheel. Made of steel-rim reinforced plywood, ample wheel strength results. Installation with a metal shaft-mounting flange minimizes chance of wheel play. Write for complete information and prices on Hubbard replacement Hand Wheels.

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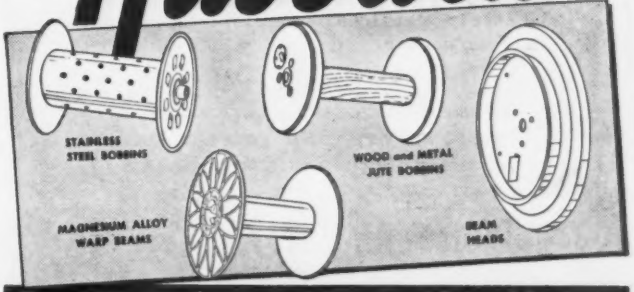
Hubbard



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"DUSCOT"*

*A NEW synthetic rubber cot scientifically discovered, developed and tested specifically for the textile industry.

RESISTS OIL—No swelling to cause concave surface. The face remains parallel.

RESISTS HEAT—No change in the character of the rolls due to heat. Successfully operated from 40° F. to 120° F.

RESISTS ABRASION—No frequent regrinding since rolls don't groove. Far less ends down.

REDUCES STATIC ELECTRICITY—A special technique of composition permits rolls to conduct electricity. That means far less static electricity—a minimum of lapping up.

OFFERS A UNIQUE SURFACE—A controlled gripping surface guarantees uniform drawing and maximum yarn strength.

HOLDS ITS SHAPE—After a shutdown rolls do not become flat.

HAS A DIFFERENT COMPOSITION—The rolls are homogenous throughout—not particles of material held together by a binder. Fibres meet ONLY a uniform surface.

"DUSCOT" ROLL COVERING MATERIALS *have an outstanding performance record in over two years of exhaustive field tests under actual operating conditions.*

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W. D. DODENHOFF CO., Inc.
619 RUTHERFORD ST. GREENVILLE, S. C.

NEWS ABOUT SUPPLIERS

mett W. MacCorkle, Jr., has been appointed Airco's Portland, Ore., district manager to work under H. P. Etter, Pacific Coast manager, and L. A. Hamilton, formerly assistant manager of the Seattle District has been appointed manager of that district.

The Hinde & Dauch Paper Co., Sandusky, Ohio, has purchased a 22-acre site at Chatham, Ontario, for construction of a $1,000,000 box factory to be owned and operated by its Canadian subsidiary.

Jessop Steel Co., Washington, Pa.—The firm name of Jessop's exclusive representative for the state of Wisconsin has been changed from the L. E. Meidinger Co., Inc., to Bell Steel Sales, 606 W. Wisconsin Ave., Milwaukee 3, Wis.

Railway Express Agency, New York, has appointed C. F. Messenkopf as general traffic manager to succeed R. S. Wheeler, who will assume new duties as special assistant to the vice president in charge of traffic.

Federal Electric Products Co., Newark, N. J., has appointed three new district sales managers. William M. Stark becomes manager of the company's Southwestern district, with headquarters in St. Louis; George L. Stout is the new manager of the East Central district with offices in Cincinnati; and Clarence G. Landeck becomes manager of the Middle Western district with headquarters in Chicago.

Tube Turns, Inc., Louisville, Ky., has moved its Chicago office to suite 904 Fairbanks-Morse Bldg., 600 So. Michigan Ave.

Westcott & Mapes, Inc., New Haven, Conn., has appointed Elias I. Kelsey to be chief of its Industrial Engineering Div.

Leslie Co., Lyndhurst, N. J., manufacturers of regulators, controllers, strainers, and whistles has appointed the following agents to handle industrial sales and service: Plant Equipment, Inc., Minneapolis, Minn.; Fluid Equipment Co., Dallas, Texas; Avery M. Walsh & Sons, Albany, N. Y.; Claude B. Smith, 615 Sansome St., San Francisco 11, Calif.; Joseph Tripoli, 401 Chamber of Commerce, Buffalo 2, N. Y.; Riley Power Equipment Co., 7025 W. Cedar St., Milwaukee 13, Wis.; Stem & Heider, 135 Spring St., Rochester 8, N. Y.

Maguire Machinery Co., Inc., New York, N. Y., has been organized to engage in the designing, manufacturing, and selling of power conveyors. Walter Maguire is president. The lines of equipment formerly handled by the Machinery Div. of Walter Maguire Co., Inc., will be taken over.

Ovens for Industry, Inc., Cleveland, Ohio, has named Dwight M. Wilkinson as president. He was formerly chief engineer of Industrial Ovens, Inc.

Slaughter, Saville & Blackburn, Inc., Richmond, Va., has appointed Charles E. Hill as chief industrial engineer.

Hagan Corp., Pittsburgh, Pa., has purchased the Ring-Balance Instrument Co., Chicago, Hagan Corp. is also the parent corporation of Calgon, Inc.

Apex Chemical Co., Inc., New York, N. Y., has elected the following officers for 1947: Herman Rothstein, president; Charles B. Rasenberger, vice president; Hugo Helburn, treasurer; Emil Baer, secretary.

Westinghouse Electric Corp., Pittsburgh, Pa., is expanding its manufacturing facilities at the Buffalo, N. Y., plant. The new operation, formerly a part of the Switchgear & Control Div., at East Pittsburgh, will be known as the Industrial Control Division.

Blossom Products Corp., New York, has appointed William A. Heffernan as executive vice president, succeeding W. Irving Wolf, who has resigned to devote his full time to the management engineering field. Mr. Wolf will continue as consultant to Blossom Products.

Union Special Machine Co., Chicago, Ill., has completed a construction project which adds three new upper floors to its Chicago factory.

C.I.T. Corp., New York, has moved its Chicago office into new and larger quarters at 1 North LaSalle St.

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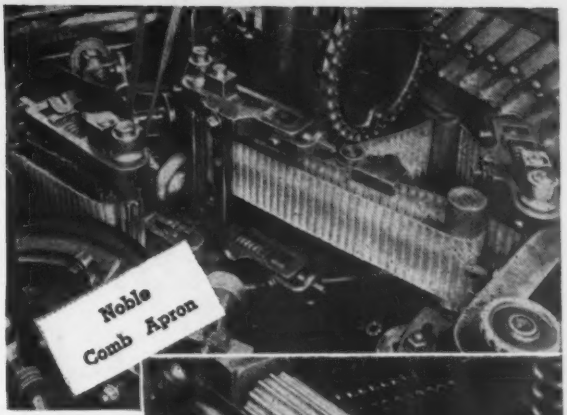
IN BARNES

WORSTED APRONS

FOR BRADFORD COMB AND GILL BOXES



Worsted Aprons must be of even thickness throughout, have minimum stretch, run straight, and have waterproof laps which are strong and flexible. They must grip wool gently but firmly, carry it forward in just the manner which assures a properly made yarn. Where aprons from substitutes and even from the best leathers have failed Barnes Aprons MADE GOOD—because of our research and many years of experience in handling worsted problems.

Our apron leather is tanned *in our own tannery* from finest Foreign and Domestic Steer Hides. Only the most selective hide area is used, free of all imperfections.

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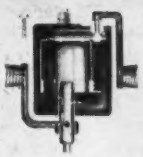
Tanners and Manufacturers

Where unusual knowledge of Leather is combined with long years of Textile experience
APRONS—BELTING • FLAT • ROUND • & ACCESSORIES—STRAPPING

GOOD STEAM TRAPS SAVE MONEY

No one will quarrel with that! Plant operators know that air and condensation must be removed from steam coils and lines rapidly and completely, if the steam is to do its work efficiently.



BUCKET

A good steam trap will do this, day after day, for years, and with a minimum of maintenance or interruption.

The Sarco Inverted Bucket Trap illustrated is such a good steam trap, as testified by hundreds of users who employ them throughout their plants.

The advanced design includes straight-through connections for easy installation; a strainer built into every trap; stainless steel mechanism attached to the trap cover for easy inspection and cleaning.

Standard types, ½" to 2" up to 250 lbs.; forged steel types to 900 lbs. pressure. Ask for Catalog No. 350.

SARCO SAVES STEAM

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Don't Overlook

Speedy Oakite Steam-Cleaning

When you must clean machinery before repair or repainting, let Oakite Steam-Detergent Cleaning do the "dirty work".

That way you get thorough cleaning action in a fraction of the time demanded by manual methods. Combining steam heat and potent Oakite steam-gun pressure with the vigorous detergency of Oakite materials, this method gives you cleaning action that quickly removes tenacious coatings of lubricating oil . . . blasts off hampering grease, dust and lint. Too, it saves time by helping mechanics inspect and repair parts with accuracy and speed. That means less downtime for your equipment. Details of this Oakite way to effective, versatile cleaning—yours for the asking. Write.

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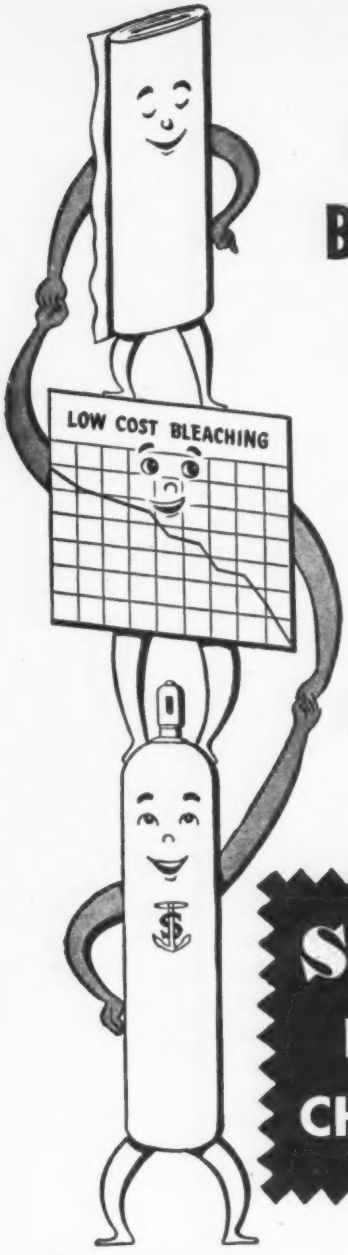
Specialized Industrial Cleaning



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SOLVAY LIQUID CHLORINE is recognized by leading textile houses as the *time-tested* bleaching method. It is *lowest in cost for mass production.*

SPECIFY SOLVAY LIQUID CHLORINE. It combines controlled quality, low cost and high standards of purity with dependable performance. Available in tank cars and ton containers.

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NEWS ABOUT Mills

Cotton Mill News

Abernethy Yarn Mills, Newton, N. C., has work under way on enlargements which will allow a 25% increase in production. Machines have been purchased for the new space, and some old machines will be replaced. Twisters will be increased in number from 26 to 50 and spinning frames from 60 to 73. The work will require about three months.

Bates Mfg. Co., Lewiston, Me., spent over $1,000,000 for capital improvements and equipment during 1946 and has made commitments to spend an additional $2,000,000 this year.

Beaumont Mfg. Co., Spartanburg, S. C., is installing a new Barber-Colman automatic spooler. Also scheduled for installation between plants 1 and 2 are two semi-automatic conveyors.

Buck Creek Cotton Mills, Siluria, Ala., has let contract to Rust Engineering Co., Birmingham, Ala., for a $175,000 one-story addition.

Clark Thread Co. now has six enlargement projects underway in its Georgia plants. Machinery for a thread-spinning plant is being installed in the Acworth, Ga., building formerly occupied by Acworth Mills, whose machinery has reportedly been sold to Amer-Ind, Inc., New York, N. Y., for export. This plant should be in operation soon and will employ 300 workers. Another expansion is going on in Toccoa, Ga., where a two-story building is being erected for use as an additional spooling plant. The company already has a bleachery, dye plant, and spooling plant there. It will also enlarge its Pelham, Ga., mill by 25 to 30% in an expansion program.

Harrison-Walker Mills, Shelby, N. C., has been sold to D. A. Beam Co. and W. C. Sarratt, both of Shelby. The transaction covers all property except machinery, which was sold recently to Troy-Whitehead Machinery Co.

William E. Hooper & Sons Co., Baltimore, Md., has purchased a tract of land in the Druid Hill Park section of the city and is reported to be planning expansion.

Industrial Management Corp., New York, N. Y., has acquired a substantial block of stock in Wamsutta Mills, New Bedford, Mass. The former company controls Airdale Worsted Mills and Lippitt Worsted Mills, Woonsocket, R. I., and Crown Mfg. Co., South Attleboro, Mass.

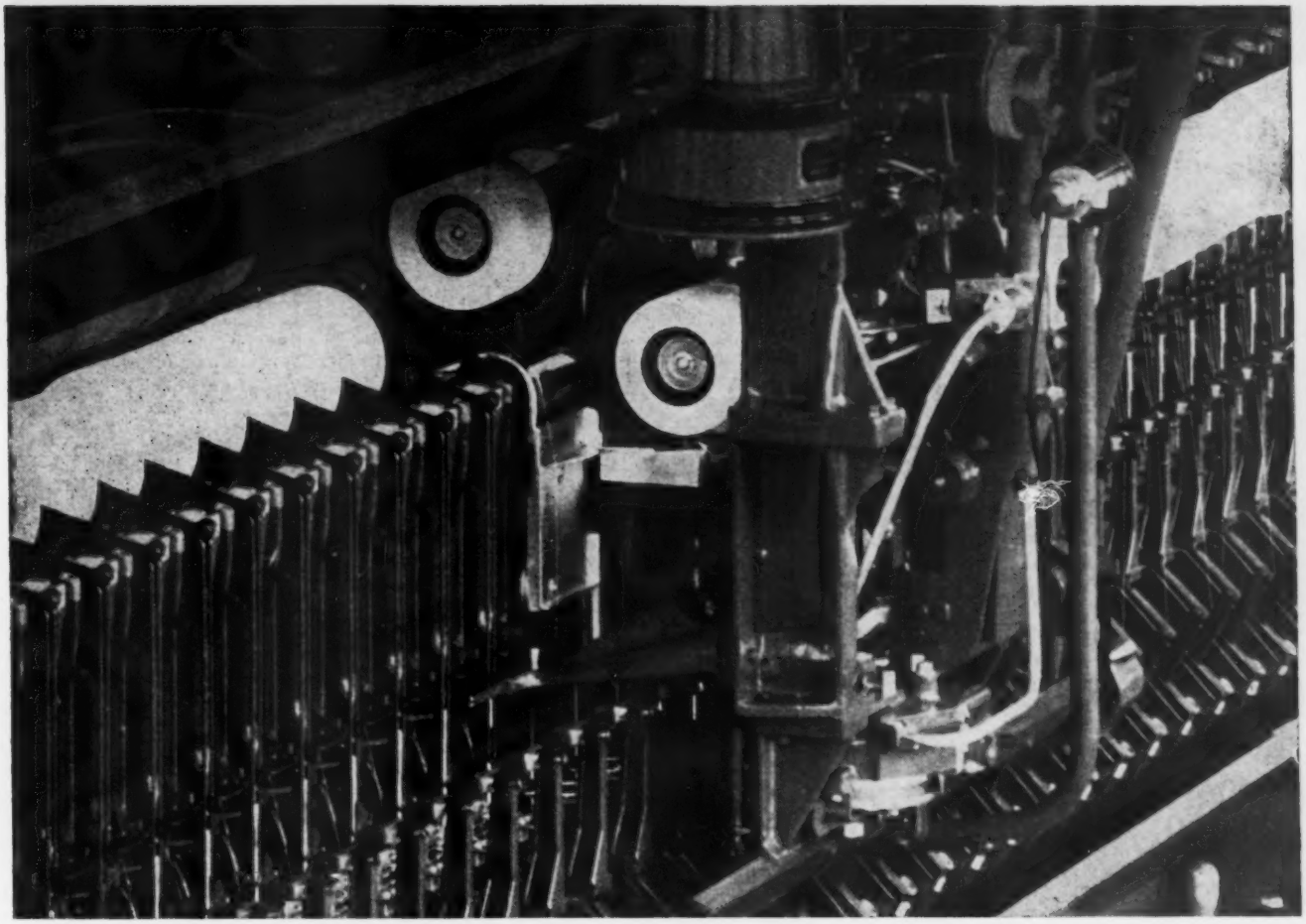
Lola Mills, Stanley, N. C., is installing a considerable amount of new equipment which will increase the plant's production capacity.

Mandeville Mills, Carrollton, Ga., plans modernization of machinery throughout the plant. An annex to the dye plant will also be built, and a 1,000-lb. stainless-steel dye kettle will be installed.

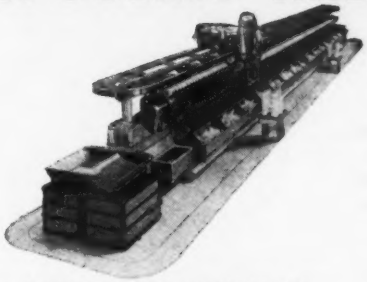
Millville Mfg. Co., Millville, N. J., has started a night shift as part of a long-range program designed to result in an 18-hr. morning-to-midnight schedule. With the addition of this shift, employment has gone up to over 700 workers.

Nashua Mfg. Co., Nashua, N. H., contemplates making many changes. New products will play an important part in expansion. Old machinery has been removed and some of it sold in South America.

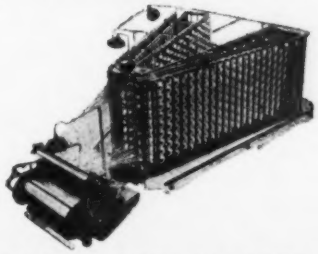
Opp Mills and **Micholas Mills,** Opp, Ala., are installing much new equipment in an expansion program which is adding 52,824 sq. ft. of floor space. At Opp Mills, 300 looms have been installed and spooling and warping equipment. Carding and spinning machinery is on order. Micholas Mills has added 100 new looms, is now



EVEN WHEN RUN ONLY PART TIME, BARBER-COLMAN SPOOLING AND WARPING IS A GOOD INVESTMENT



AUTOMATIC SPOOLER



SUPER-SPEED WARPER

While the Barber-Colman System of Spooling and Warping has been generally accepted as "standard" in American cotton mills, many mill men have thought that it could perform to advantage only in the larger mills. This is not the case. The economies which can be achieved with Barber-Colman equipment are so substantial that the machines can be a good investment for many of the smaller mills *even though the number of looms to be served is such that the equipment is not run to full capacity.* This has been proved in a number of instances. The purchase of each of these machines was preceded by a careful survey of the individual mill conditions which proved that the investment would be a paying proposition. Before you discard the idea of using Barber-Colman Spooling and Warping as "only for the big mills", ask for a survey — there is a good chance that it may show how you, too, can reduce costs and improve your product. Ask your Barber-Colman representative for detailed information.

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • DRAWING-IN MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

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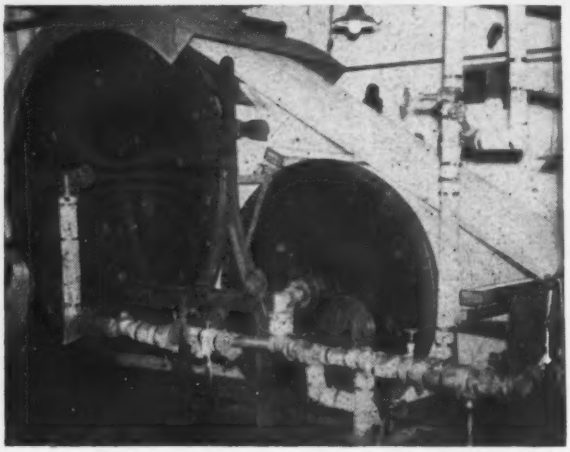

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Increased production —
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For Maintained Shrinkage—
Perfect Finish—Long Life

HUYCK
→COMPRESSIVE SHRINKAGE←
BLANKETS

for use in shrinking fabrics to the *"Sanforized"* standard by the Compressive Shrinkage process, are daily meeting the most exacting requirements of finishers throughout the industry. From the lightest and finest fabric to the heaviest denim, there is a special Huyck blanket to meet your specific needs.

Huyck blankets retain high shrinkage and finish properties to the last.

PALMER BLANKETS—also available for your special requirements.

Write for information
or see our representative

F. C. HUYCK & SONS
KENWOOD MILLS
Albany 1, New York

installing a slasher, and has spinning and warping equipment on order.

Oconee Mills, Westminster, S. C., is erecting a substantial addition.

Park, Davis & Co., Bay Division, Versailles, Conn., has work under way on additions which will involve the expenditure of $250,000. This includes a picker plant, a storage unit, and a main-plant addition. Hewlett Construction Co., Bridgeport, Conn., has the general contract.

Riegel Textile Corp., New York, N. Y., spent nearly $2,900,000 during 1946 to replace equipment and make improvements in its plants and villages. Expenditures totaling $2,200,000 for further capital improvements have been approved for 1947. The largest single expenditure last year was for a new rayon-fabric finishing plant at Ware Shoals Mfg. Co., Ware Shoals, S. C. This plant started operations in February. Air-conditioning equipment has been installed in the spinning and weaving rooms of both Ware Shoals and Trion Mfg. Co., Trion, Ga. In 1946, 162 new looms were installed to replace old equipment, and delivery of an additional 603 is expected in 1947. In Trion, the company has started construction of a boiler plant equipped to burn either coal or oil.

Susco Mills, Inc., Forsyth, Ga., formerly Ensign Cotton Mills, has been sold to Brighton Mills, Inc., Shannon, Ga., by Susquehanna Mills, Inc.

Va-Do Fabrics, Inc., Centre, Ala., recently organized, is manufacturing narrow woven tapes, webbing bindings, and similar products.

Waxhaw Spinning Co., Inc., Waxhaw, N. C., has been leased by D. R. Lafar, Jr., and Harry T. Allen, both of Gastonia, N. C. The new owners, who operate other mills in Clayton, Fayettesville, Harden, and Warren, N. C., and Rock Hill, S. C., plan to continue production along the lines which the mill has been running.

Woods Mfg. Co., Lambert, Que., is building a new plant at an estimated cost of $500,000.

Wool Mill News

Arms Textile Mfg. Co., Manchester, N. H., has purchased and is renovating a portion of the Amoskeag mill in Manchester. The property is being completely modernized and equipped with the latest-type power looms. The plant will be known as Stark-Amoskeag Woolen Mill. With the acquisition of this property, Arms Textile Mfg. Co. becomes the largest employer in Manchester.

Associated Spinners, Inc., New York, N. Y., is building a new plant to expand production of the cashmere yarns it manufactures.

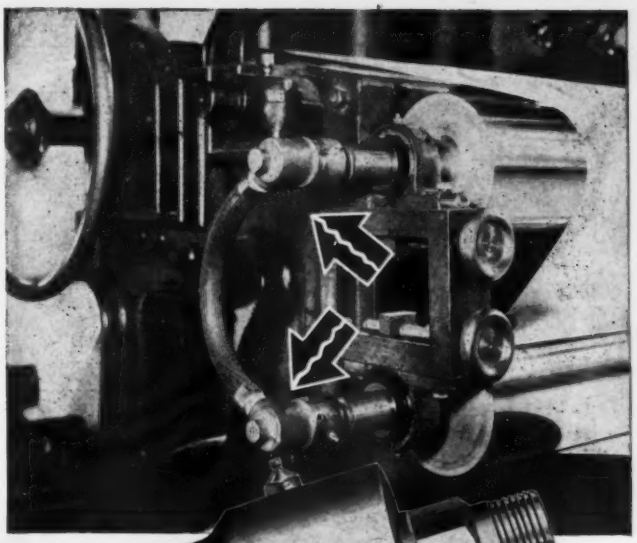
Blue Bonnet Blanket Mills, Inc., San Marcos, Texas, offered its plant at auction on April 16.

Branch River Wool Combing Co., Inc., North Smithfield, R. I., has work in progress on two additions which will cost about $60,000. Temple & Crane, Inc., Boston, Mass., has the contract.

Hollins Mill of Australia Pty. Ltd., a subsidiary of Hollins Mills Co., Ltd., Manchester, England, has started production of fine wool-mixture fabrics in Australia and is equipping a former munitions plant at Villawood, near Sydney, to produce dress fabrics. Present production is at Leichhard, New South Wales.

Hudson Worsted Co., Hudson, Mass., has received CPA permission to proceed with construction of an addition at a cost of $333,815.

F. C. Huyck & Sons, Albany, N. Y., has filed application with CPA for permission to carry out a $1,300,000 building and repair program which will run three years. Proposed construction includes a 70 x 154 ft. two-story building to be used for wet finishing processes; rebuilt steel warehouses to facilitate shipping; and new rest-rooms and locker-room facilities. New equipment will include a boiler, wool bins, carding equipment, ring frames, spoolers, washers, dryers, conveyors, electric trucks and trailers, materials-handling equipment, and elevators. The major part of the expenditure for modernizing the old buildings will go to-



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"For a Maine man, working isn't enough. I keep in trim after hours with my hobbies. I have a garden and I raise chickens. Like to do scout work too. I'm chairman of the Boy Scout Troop Committee. Also, I'm a trustee and member of the official board of my church.

"I'm a man who likes honesty and loyalty. That's what I like about the fellows I work with. I like a well-made product. That's what I like about the job I do. And I like square shooters. That's why I'm still with the company after twenty-eight years."

Frank A. Clarke

What Mr. Clarke says—and the type of man Mr. Clarke *is*—merit the consideration of industrialists who are considering new locations for their plants. Mr. Clarke *is* Maine.

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ward reinforcing the foundation of the old main mill, rearranging machinery, and removing interior walls and partitions to permit this shift. Kenwood Mills, Ltd., Arnprior, Ont., a unit of F. C. Huyck & Sons, also has an expansion program underway. Of $500,000 allotted for this purpose, $160,000 has already been spent for finishing and locker-room buildings.

James Lees & Sons Co., Bridgeport, Pa., expects an increase of one-third in its carpet and carpet-yarn business by the end of 1947.

Mohawk Carpet Mills, Amsterdam, N. Y., contrary to previous reports, will not open a carpet mill at Dublin, Va. The company will open a woolen-yarn spinning plant at Dublin to increase yarn output so that idle weaving equipment at the Amsterdam plant can be put into production.

Norwood Woolen Mills, Inc., Bristol, Va., has changed its name to Rocky Creek Mills, Inc. C. V. Henkel, Jr., is president.

Philadelphia Wool Scouring & Carbonizing Co., Philadelphia, Pa., will build a $60,000 one-story warehouse addition.

Seymour Woolen Co., Pawtucket, R. I., has been organized to operate a mill. Ernest Seymour, Pawtucket, is principal incorporator.

Alexander Smith & Sons Carpet Co., Yonkers, N. Y., has contracted for the installation of two freight elevators in two merchandise warehouses. Each of the elevators will be of 4,000 lb. capacity.

Strong, Hewat & Co., Briggsville, Mass., has completed the major part of the construction on its $400,000 addition and is now installing machinery.

Wool Combing Corp. of Canada, Ltd., Acton, Ont., will increase annual wool-top production from 6,000,000 to 7,000,000 lb. when machinery now on order is installed. The plant now has six combing sets for low and medium crossbreds and six for merinos. The expansion calls for three Noble combs in the merino section and 12 French sets.

Rayon & Silk News

American Viscose Corp., Wilmington, Del., last year spent $13,798,000 for additions to plant and equipment and $927,000 for replacements. An estimated additional $31,000,000 will be required to complete projects authorized up to the end of 1947.

Canadian Celanese is building a new plant in Sorel, Que., to make acetate yarns and fabrics. The company also plans to expand and improve facilities at its Drummondville, Que., plant.

Covington Weaving Mills, Covington, Va., is reported to have been sold by Burlington Mills Corp., Greensboro, N. C., to William Klopman. Mr. Klopman recently resigned as executive vice president of Burlington Mills.

Easthampton Weaving Co., Easthampton, Mass., is moving to Paterson, N. J., where it has purchased a small mill. Some of the machinery has been shipped, and the transfer is expected to be completed in two months. The company was established in 1945 and produces about 120,000 yds. of rayon gray goods annually.

Fiberglas Canada, Ltd., Oshawa, Ont., has purchased a site near Sarnia, Ont., on which it intends to build a $1,500,000 plant to convert soda ash and fine sand into glass fiber. The company now operates a finishing plant in which it makes glass yarns from purcased fiber.

Hartford Rayon Corp., Hartford, Conn., expects to have its $1,000,000 expansion program substantially completed this year. Production will be increased by about 33%.

Hess, Goldsmith, Inc., Wilkes-Barre, Pa., has formed an industrial-fabrics division. Production of Fiberglas products will be expanded, and industrial fabrics from other textile fibers suitable for the electrical-coating and plastic trades will be developed.

Owens - Corning Fiberglas Corp., Toledo, Ohio, is reported to be planning a $7,000,000 plant in Santa Clara, Cal., to manufacture clothing

THE

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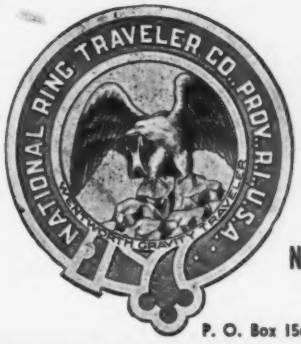

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SPINNING FRAMES also ROVING FRAMES

Spindle design permits using PICK (which gathers the fly and lint), 3/16" diameter by 5" long when used on Spinning Frames and 3/16" diameter by 7" long when used on Roving Frames. Exhaust air directed back of roll picker to prevent fly and lint from being blown into yarn when spinning . . . patent applied for. Steel housing for safety; special grease-sealed bearings. No lubrication required.

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Geo Thomas & Co.....Manchester, England.—European Agt.

linings and filler for pillows, mattresses, and acoustic blankets. The project will have about 500,000 sq. ft. of manufacturing and warehouse space and is expected to be completed by the end of 1947.

United Merchants & Manufacturers, Inc., New York, N. Y., plans to erect a one-story rayon-fabric mill in Clearwater, S. C. Cost, including equipment, will be about $450,000.

United Rayon Mfg. Co., Old Fort, N. C., now has limited production of synthetic warp-knitted fabrics under way at its new plant, which is nearing completion.

Knitting Mill News

Barbet Mill, Lexington, N. C., plans to erect a three-story addition, although not immediately. The company has made substantial expansion and improvement in its facilities during the last 15 months. Two large dyeing machines and three smaller ones have been installed in what was formerly the engine room, and a new boiler is providing the steam for dyeing and finishing operations. Twenty-one wide knitting machines are in operation in the former weave room, from which all looms were removed before the plant came under present ownership. Additional machines will be added in coming months. Yarn-preparation facilities now include combing; new equipment has been ordered to improve the opening and picking departments.

Burcon Hosiery Mills, Inc., Asheboro, N. C., now equipped with 66 54-gage Wildman single-unit full-fashioned machines, expects to to have 88 machines by late fall.

Darien, N. Y.—Morris B. Weiss has purchased a school building with the intention of converting it into a knitting mill. He will install 15 knitting machines and hopes to be able to expand operations to employ a minimum of 50 persons.

Diamond Knitting Mill, Newton, N. C., has purchased a six-acre tract on which it plans to erect a brick building to house operations now located in the Newton business district. The new building will allow for expansion.

Georgia Hosiery Mills, Blakely, Ga., will install 25 new machines, and 40 additional operatives will be employed.

Georgia Knitting Mills, Atlanta, Ga., organized about a year ago, has additional machinery on order and expects to double production. Twenty-five machines will be installed. A. Gepner heads the company.

Glen Alpine Knitting Mills, Inc., Glen Alpine, N. Y., has been sold for $70,000 to W. S. Yount, who operates Yount Hosiery Mills, Newton, N. C. The machinery is being stored in Newton until a building can be obtained to house it.

Gossett Knitting Mill, Griffin, Ga., is being organized with Homer Gossett, Jr., as manager. Twenty machines were purchased from Fairburn Knitting Mills, which is being closed down. The mill will make men's fancy cotton socks.

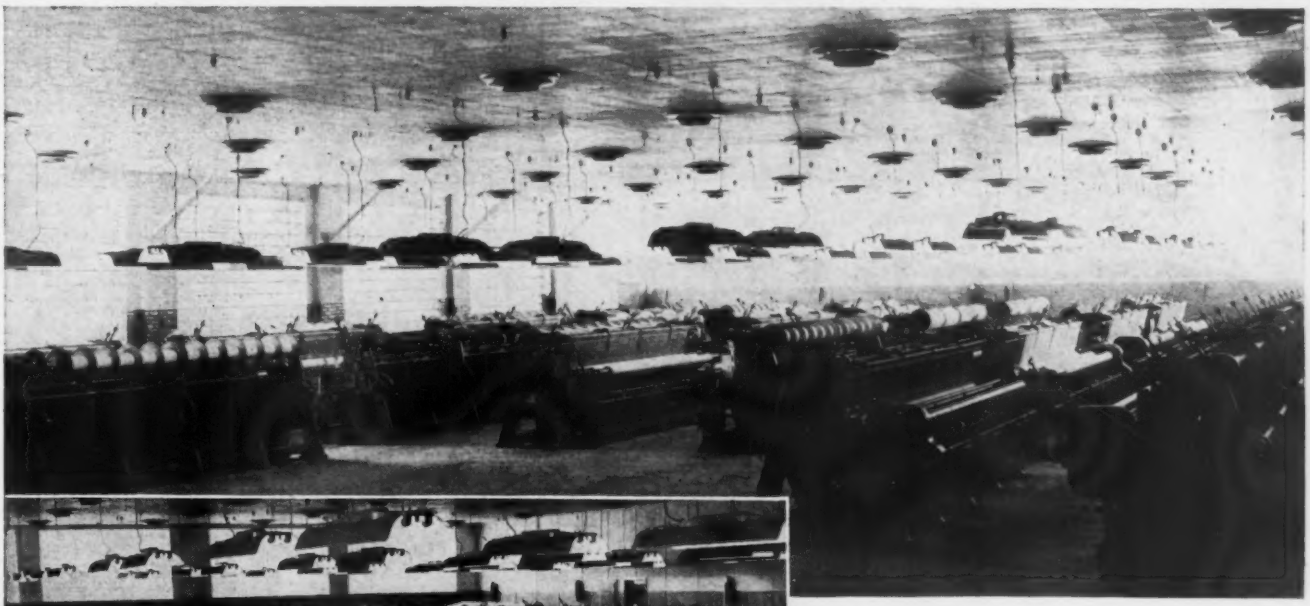
Natona Mills, a unit of Native Laces & Textiles, Inc., New York, N. Y., is completing construction of its new plant at Dallas, Pa. The one-story structure will contain 86,000 sq. ft. of floor space and will include a dyeing and finishing unit. Operations are scheduled to begin July 1. The plant will be equipped with Levers' lace, bobbinette, high-speed tricot, and Simplex machines. Operations are continuing at the temporary plant in Dallas and in rented quarters in Wilkes-Barre, Pa. Fabrics for women's apparel will be manufactured.

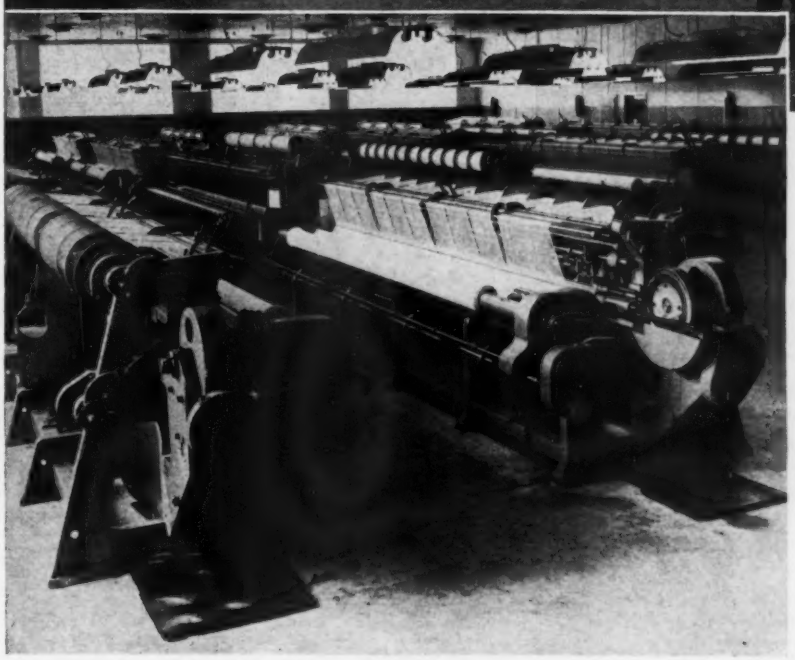
Phoenix Hosiery Co., Milwaukee, Wis., had commitments, as of Dec. 31, 1946, for new machinery and equipment totaling $1,313,000. Some new machines were received in 1946.

Red Fox Hosiery Mill, Newton, N. C., is erecting a brick building near the site of the present plant and expects to have it ready for occupancy soon. The new plant will be larger than the existing one, which houses about 50 machines.

Rome Knitting Mills, Rome, Ga., has moved its dyeing facilities to another section of

IT PAYS TO USE REINER MACHINES





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The new Reiner High Speed Tricot Machine has a cruising speed in excess of 450 courses per minute, with a knitting width of 168 inches (or 84 inches with still higher speeds). It takes 21 inch spools or any spools of the conventional size. It can be operated with either a pattern wheel or a chain link drive, the change-over being merely a matter of minutes. This gives the knitter a still wider selective pattern range of one bar or two bar tricot fabrics of rayon, nylon, silk, cotton, wool, etc., single-fibre or blended yarns.

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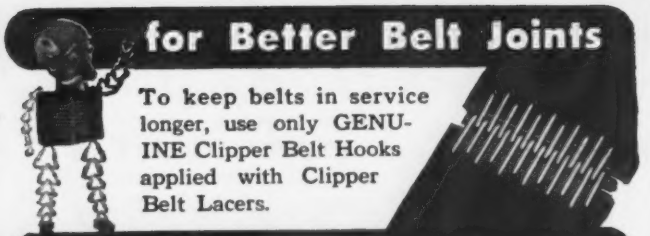
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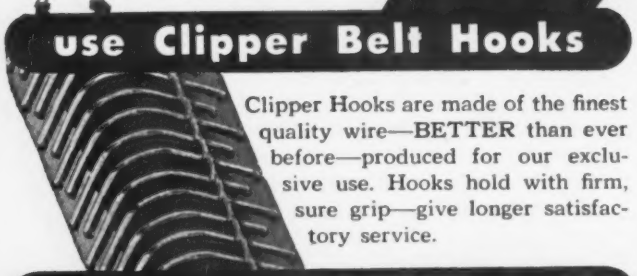
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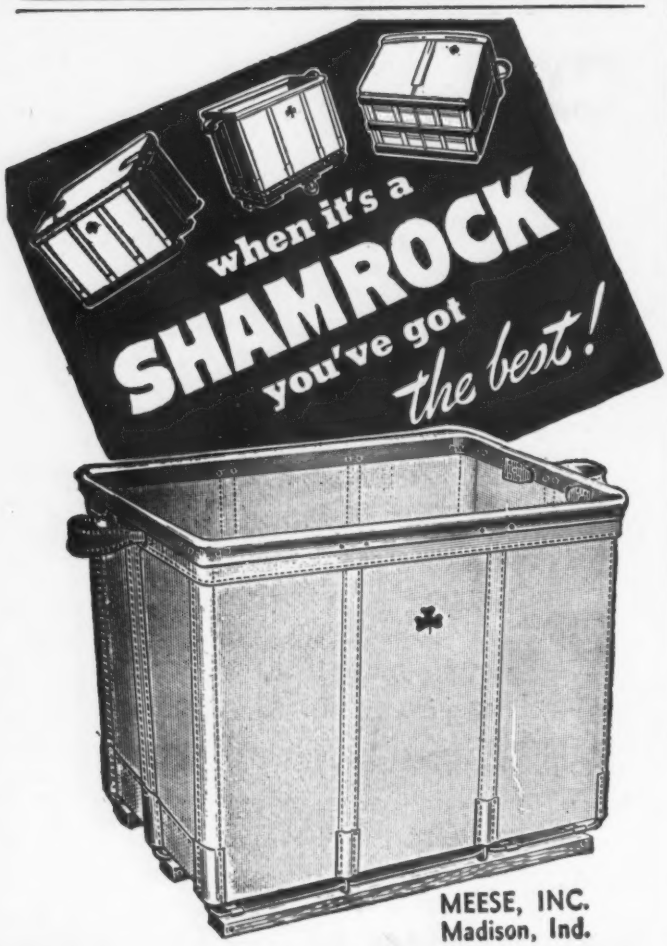


the plant and will use the vacated space for storing chemicals and salt. Fluorescent lighting is being installed throughout the mill, and equipment is being rearranged to make room for the installation of additional knitting machines.

Rugby Knitting Mills, Inc., Buffalo, N. Y., has purchased and moved its operations into the former Wildroot plant at 1490 Jefferson Ave., Buffalo.

Spruce Pine Hosiery Mills, Inc., Spruce Pine, N. C., has been incorporated with authorized capital of $100,000 to manufacture hosiery. Principals, all of Spruce Pine, are F. B. Fortner, W. E. Cline, and W. M. Davenport.

Travelers Mfg. Co., Marianna, Ark., a new enterprise, has begun production of men's socks. Dress socks will be added later. Felix Hampton will be plant manager.

Van Raalte Co., Franklin, N. C., has completed the construction of part of its new plant and a number of machines are being installed.

Wayne Knitting Co., Fort Wayne, Ind., has made commitments totaling about $600,000 for construction and $777,000 for equipment in connection with its new plant at Humboldt, Tenn. The plant will be operated as Humboldt Full-Fashioned Hosiery Mills, Inc.

Wytheville Knitting Mills, Wytheville, Va., has secured OTC permission to construct a new plant costing $150,000 for the manufacture of hosiery.

Dyeing & Finishing Plant News

Joseph Bancroft & Sons Co., Wilmington, Del., plans an addition and improvements to its mill. Cost will be over $60,000. L. H. Doane, Wilmington, is architect.

Brookside Mfg. Co., Inc., 65 Brookside Ave., Boston, Mass., has been incorporated to manufacture coated fabrics.

Capitol Piece Dye Works, Garnersville, N. Y., has doubled its fast-dyeing equipment. Additional padders and new jigs have also been installed.

Cranston Print Works, Cranston, R. I., has plans under way for two mill buildings. Lockwood Greene Engineers, Inc., Boston, Mass., is preparing the plans.

Foto-Fab, Inc., Pawtucket, R. I., a recently established company, will start printing and finishing fabrics by a new process. The firm has been licensed to use the process of Leize, Inc., New York, N. Y., which permits the application to textiles of three-dimensional photographic scenes and flat-type designs. The process employs vat dyes. Mrs. Leize Rose Stewart, who developed the process, will be associated with the new company. Edward Schwartz will be in charge of production.

Jay Bee, Inc., Raleigh, N. C., has been incorporated to manufacture screen-printed products. Officers are J. B. Gaither, president; W. A. Thomason, Jr., vice president.

Printed Fabrics Corp., Scranton, Pa., has received approval from OTC for plant improvements valued at $65,000.

Prestige, Inc., Philadelphia, Pa., has opened a new finishing plant at 17th St. and Allegheny Ave. The plant will process about 25,000 doz. pairs of women's full-fashioned hosiery weekly and will employ 300 persons.

Yarn Dyers, Inc., 1140 San Fernando Road, Los Angeles, Calif., has taken over a new building containing over 20,000 sq. ft. of floor space and will expand operations.

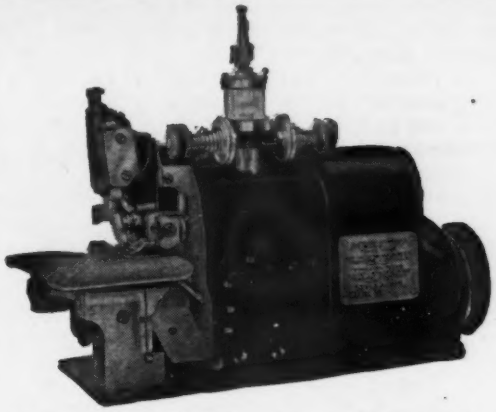
Miscellaneous Mill News

Carolina Asbestos Co., Davidson, N. C., is now controlled by Union Asbestos & Rubber Co., Chicago, Ill.

Central Fiber Products Co., Chelsea, Mich., was recently destroyed by fire with a loss of $300,000.

Electro Mechanical Fabrics Corp., Warwick, R. I., has filed plans for a 65 x 120 ft. one-story plant.

Johnson Cordage Co., Prattville, Ala., will rebuild the plant recently destroyed by fire.



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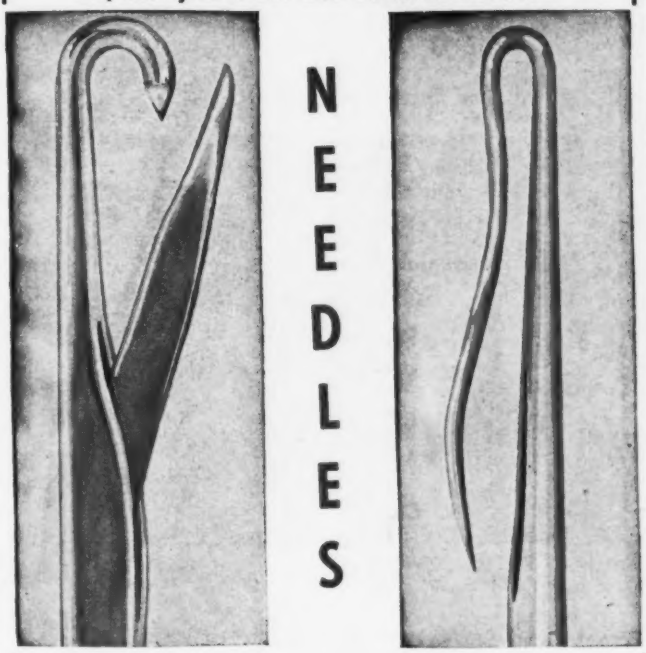

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NEWS ABOUT *Men*

W. R. MacIntyre has been named president of Joseph Bancroft & Sons Co., Wilmington, Del. He succeeds **Joseph Bancroft, Jr.**, who was elected chairman of the board. **George White** has become vice president in charge of operations, and **Herbert P. Ceveling** is now treasurer.

Thomas J. Zimmerman has been elected president of Union Mfg. Co., Frederick, Md., succeeding the late Louis L. Wilson. Mr. Zimmerman will retain the office of treasurer. **R. H. Hall** was named general manager and technical adviser at the same time.

C. W. Byrd, who was president and treasurer of Davidson Cotton Mills, Davidson, N. C., and who had agreed to manage the mill after its recent sale to the McCanless interests, has relinquished his duties on the advice of his physician.

Walter E. Hildick has been named a vice president of Textron, Inc. He will continue in charge of operations at the Nashua, N. H., plant.

Edward A. Mohr, who had been general superintendent of Nolde & Horst Co., Reading, Pa., has been elected vice president in charge of production.

Herman Cone, president of Proximity Mfg. Co., Greensboro, N. C., has been appointed as one of 13 business executives from this country who have flown to Germany under special invitation of Secretary of War Patterson to make a study of the industrial and export problems in the American and British zones of occupation.

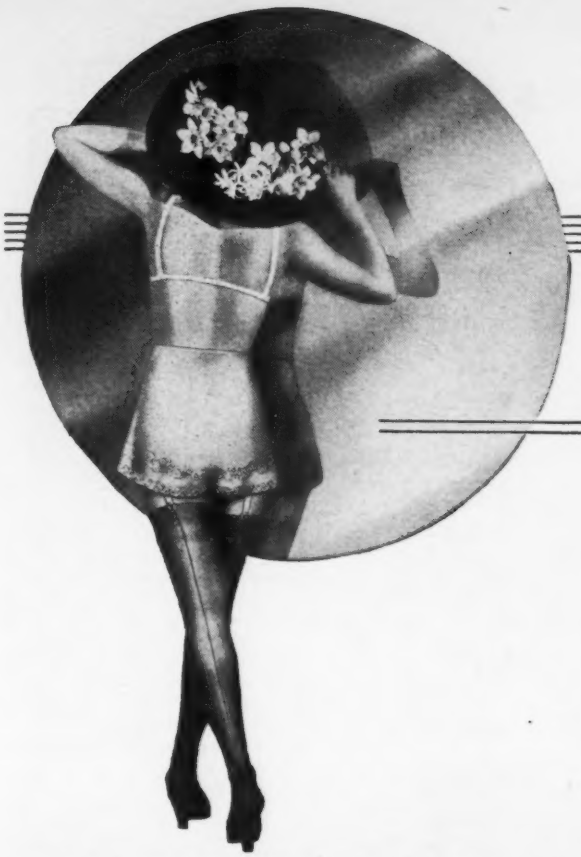
Joseph F. Zemaitis, formerly with U. S. Rubber Co., Akron, O., has become vice president and technical director of Burlington Mills, Inc., Burlington, Wis.

H. G. Stone has been elected a vice president and renamed works manager of Tennessee Eastman Corp., Kingsport, Tenn.

J. H. Daughdrill has been elected a vice president of American Thread Co., Inc., New York, N. Y. Mr. Daughdrill will continue as general manager of the company's southern division.

Julian T. Hightower has been elected executive vice president of Thomaston Cotton Mills, Thomaston, Ga., **W.**

LOUIS HEILBRONNER, chairman of the board of Holeproof Hosiery Co., Milwaukee, Wis., who recently celebrated his 65th anniversary with that company. When 15 years old, he joined the late Carl Freschl, who had founded the company, in 1882 when the latter moved his plant established 10 years previous at Kalamazoo, Mich., to Milwaukee. It was then known as Kalamazoo Knitting Works. Mr. Heilbronner began as a hosiery presser at $3 per week. Years later he became secretary-treasurer, then president and finally chairman.



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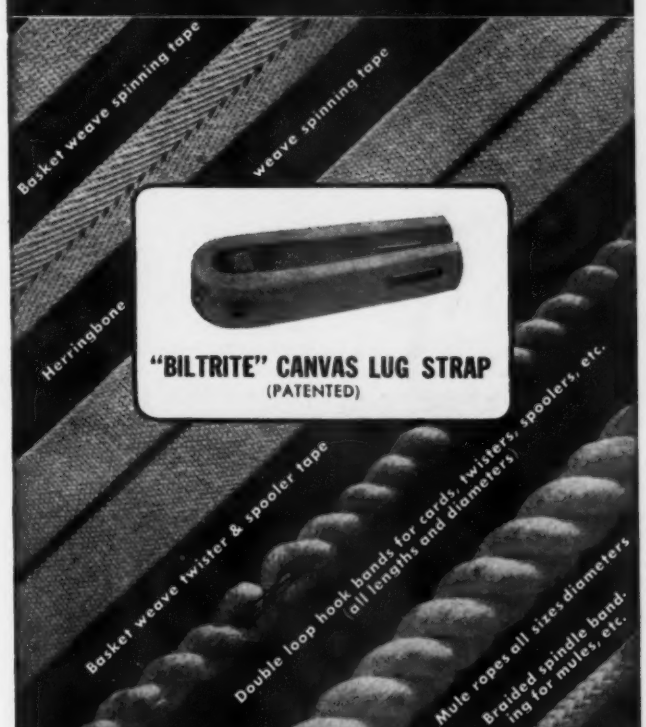
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STRUCTURAL • MECHANICAL • ELECTRICAL
WATER • GAS • WASTE DISPOSAL
JOHN J. HARTE CO
ATLANTA GA.

NEWS ABOUT MEN

H. Hightower, Jr., was named vice president and assistant treasurer.

Talbot Shelton has been named vice president of R. K. Laros Silk Co., Bethlehem, Pa.

Aaron Quinn, formerly vice president and general manager of Cleveland Cloth Mills, Shelby, N. C., has become assistant to **Nick Carter**, vice president of J. P. Stevens & Co., Greensboro, N. C.

Arthur Sudduth, of James H. Rhodes & Co., Chicago, Ill., has been elected president of the Felt Association. He succeeds **L. H. Hansel**, president of the Felters Co., Boston, Mass. **Cornelius Hubner**, president of Central Felt Co., Inc., New York, was elected vice president. Appointed members of the board were **J. T. Lawless**, president, American Felt Co.; **Herman G. Berglund**, Standard Felt Co., and **L. H. Hansel**. **Herbert S. Blake, Jr.**, president, Organization Service Corp., was re-elected secretary-treasurer.

Richard E. Reeves has resigned as vice president and secretary of Reeves Bros. Inc., New York, N. Y., to devote his time to textile-research work in a plant which he has set up near Madison, N. J.

Frederick W. Webbley, treasurer of Nonquit Mills, New Bedford, Mass., has been elected to the board of directors.

Norman J. Waugh has become secretary of Dan River Mills, Inc., Danville, Va., succeeding **Wallace Ayres**, who resigned.

Gordon Hanes has succeeded the late W. R. Brookbank as secretary of Hanes Hosiery Mills Co., Winston-Salem, N. C. **Clifford Perry** has been named office manager.

Jerman L. Fischer, of Santiago, Chile, president and chairman of the board of Fabrica Victoria de Puente Alto S. A., has arrived in New York to visit the Oscar Kohorn & Co., which is building a filament rayon plant for the Chilean concern, which will have 10,000,000 lb. capacity. In addition to heading Fabrica Victoria, Mr. Fischer is an officer or director of several companies engaged in textile, rayon, insurance, real estate, and advertising businesses. He was president of the Chilean Textile Association for six years, and is a member of the Manufacturers' Association, the Chamber of Production & Commerce, and the Santiago Chamber of Commerce.

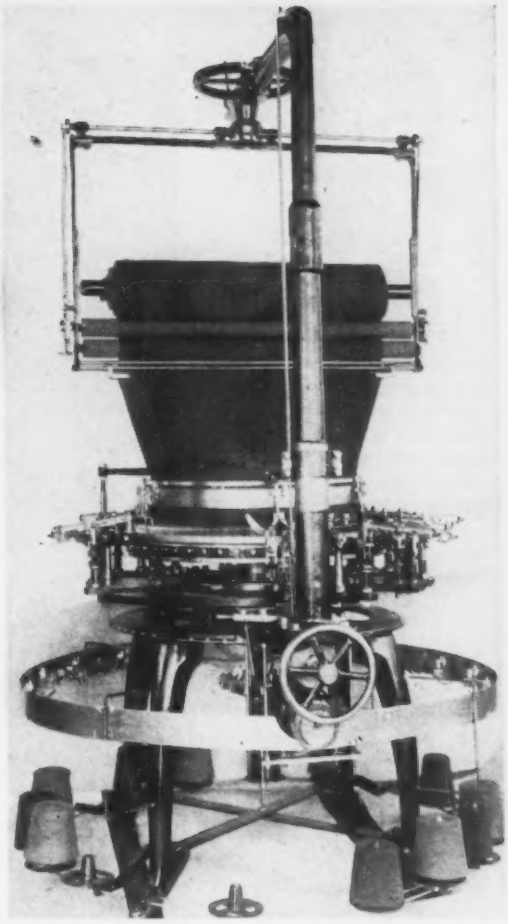
R. L. HUFFINES, JR., who has been named president and a director of Burlington Mills Corp. of New York. W. Malcom Brady, John P. Doyle, Walter S. Horne, Joseph W. Stark, and Alfred C. Werner, department heads, have been elected vice presidents and directors. Mr. Huffines, formerly vice president of the New York company, will, in his new capacity, direct the sales activities of the entire Burlington Mills organization. In addition to his duties with the selling company, he is a vice president, director and a member of the executive committee of Burlington Mills Corp., of Greensboro, N. C.

Paul E. Smith became assistant general manager at the Ware Shoals, S. C., Div. of Riegel Textile Corp. on May 1. He will assist **W. C. Summersby**, vice president and general manager. Since 1945, Mr. Smith has been director of research and quality control, Fieldcrest Mills, Spray, N. C. At Ware Shoals, he succeeds **James Harrell**, who has joined J. P. Stevens & Co. in charge of finishing activities.

Bert E. Schroeder has been appointed manager of the cotton and rayon fabrics division of William Whitman Co., Inc., New York. He succeeds **Vernon Zweck**, vice president, who is assuming other executive duties.

George S. Buck, Jr., former superintendent of finishing, Wm. E. Hooper & Sons Co., will be in charge of all activities

Single Head Spring NEEDLE Knitting Machine



PRODUCES 100 YARDS PER 8 Hr. DAY

The New S-1 Single Head Spring Needle Machine is especially designed for overcoating materials. At the same time, *any* fabric can be knit on it that is knit on the older type spring needle table!

Production is approximately 100 yards per 8 hour day, using 6 feeds.

Features: Electrical driven by V belt simplified motor drive . . . electrical yarnstop motion . . . and needle stop motion.

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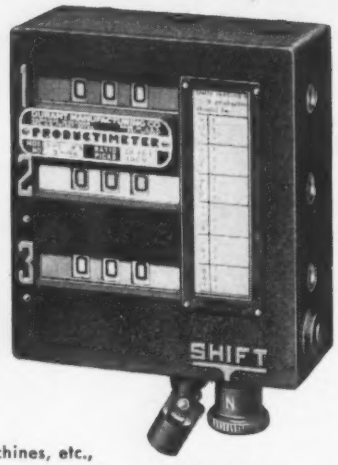
Textile Counters



Model 3 RC, R-3
Pick Counter

From Loom Pick Counters, which register the exact weaving production of three shifts, through all textile processes: on calendars, driers, folders, gigs, shears, spoolers, nappers, tenters; coating, doubling, and inspecting machines, etc., there's a Productimeter to meet the requirements . . . accurate, durable, dependable!

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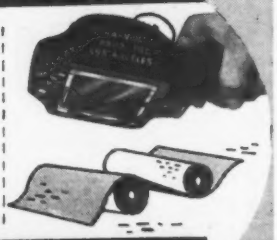

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NEWS ABOUT MEN

relating to the finishing and processing of yarns and fabric of the Department of Technical Service of the National Cotton Council of America, Washington, D. C. **Henry A. Rutherford,** former assistant director of research, Milton Harris Associates, will be in charge of all activities of the department relating to physical and chemical research on fibers, yarns, and fabrics. **Leonard Smith** is director of technical service for the council.

Miss Lucile Nowlin has been appointed advertising manager and style consultant for Callaway Mills, Inc., New York.

Lawrence Robinson, who joined Pacific Mills, Lawrence, Mass., in 1932 and has lately been active in wool buying for that organization, has become associated with the Wool Distributing Corp., Boston, Mass.

Raymond Borrioux has resigned as director of the dyestuffs research laboratory of American Viscose Corp., New York, N. Y., to join Associated Dyeing & Printing Co. as superintendent of the Cramer & King Works, Paterson, N. J. He has also become director of quality control at the Paterson plants of that company and of Sussex Dye & Print Works, Newton, N. J.

Charles E. Butterfield, formerly resident manager of Manton Mills, Manton, R. I., has become resident manager f National & Providence Mills, Providence, R. I., a unit of American Woolen Co. He succeeds **David A. Haig,** who retired. **Aldon R. Walls,** superintendent of National & Providence Mills, has succeeded Mr. Butterfield at Manton Mills.

W. A. Wolhar has resigned as general manager of the Lancaster, S. C., finishing plant of Springs Cotton Mills. He is now associated with Consos, Inc., Charlotte, N. C.

Terrey H. Tyner has been appointed manager of the Suncook and Pembroke plants of Textron, Inc., Suncook, N. H. He had previously been superintendent of the Chadwick plant, Charlotte, N. C., of Textron Southern, Inc.

H. Roy Crabtree, formerly assistant manager of the bag division of Woods Mfg. Co., Ltd., Montreal, Que., has become general manager, succeeding **R. M. Stott,** who resigned. **J. G. Costello,** former assistant branch manager at Winnipeg, has been elected secretary, another position relinquished by Mr. Stott.

James McGowan has resigned his position as a Metropolitan District sales representative of the Dyestuffs Department, Calco Chemical Div., American Cyanamid Co., to join the American Thread Co. as assistant to chief dyer. He was with the latter company several years ago in charge of package dyeing at Willimantic, Conn.

J. Arthur Whitehead has become personnel superintendent for Standard-Coosa-Thatcher Co., Piedmont, Ala. He was formerly assistant to the ersonnel manager of Fieldcrest Mills, Spray, N. C.

Mendel A. Keith, who had been general traffic manager for International Derrick & Equipment Co., has become traffic manager for Columbus Coated Fabric Corp., Columbus, Ohio.

E. H. Hines, Jr., has been named manager of United Rayon Mills, Elberton, Ga. He was formerly superintendent of the Elm City plant of Callaway Mills, LaGrange, Ga.

J. D. W. Hubbeling will be chief chemist and **J. A. Keykoop** will be plant manager of the new Morristown, Tenn., rayon plant of American Enka Corp.

Kenneth Osmer has been named converting and quality-control department manager of Schwarzenbach Huber Co., Union City, N. J.

George D. McDonnell, formerly with Industrial Rayon Corp., Covington, Va., has become assistant works manager of the tricot division of Textron, Inc., East Greenwich, R. I.

George Chappel, superintendent and buyer for Madison Woolen Co., Madison, Me., has been promoted to resident manager of the mill.

Henry B. Miller, superintendent of the Lynchburg, Va., division of Consolidated Textile Co., Inc., has been named manager of that division.

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for inspecting winding, trimming and slitting of quilting materials
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THEY are just a few of the many new and original designs that can be produced on

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Brintons are sturdy – versatile — flexible — and adaptable. They turn out clean — uniform work — and help you maintain full production schedules.

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WATER • WASTE DISPOSAL • APPRAISALS • PLANS • REPORTS

NEWS ABOUT MEN

R. L. Poovey, of Burlington Mills Corp.'s Cascade Mill, Mooresville, N. C., was recently named manager of the Dominion Burlington plant in Sherbrooke, Que. He succeeds G. W. Byrd, who has returned to North Carolina.

F. B. Wallis has left the Wartime Prices & Trade Board, Ottawa, Ont., to return to his former duties as general manager of T. Eaton Co., Montreal, Que.

W. Earl Smith, formerly owner of Andalusia Textile Mills, Andalusia, Pa., has opened an office as a textile consultant in Bristol, Pa. He is also supervising weaving operations in several Pennsylvania and New Jersey mills for jobbers and manufacturers.

Robert L. Dawson, formerly with Orr Felt & Blanket Co., Piqua, Ohio, has been named wool-division manager of Beacon Mfg. Co., Swannanoa, N. C.

E. J. Gregg, assistant manager of the Seattle, Wash., plant of Bemis Bros. Bag Co., has been named manager.

H. E. Miller, who resigned as division superintendent of Dan River Mills, Danville, Va., will join Profile Cotton Mills, Jacksonville, Ala.

Sam McCosh, formerly with Opp Cotton Mills, has become general manager of Forsyth Cotton Mills, Inc, Forsyth, Ga.

Robert C. Pickens, formerly with American Viscose Corp., has become manager and part owner of the apparel-fabrics division of Oregon Worsted Co., Portland, Ore.

R. Smith Payne, formerly with Cluett, Peabody & Co., has become assistant to the president of Alabama Textile Products Co., Andalusia, Ala. He will serve as industrial engineer and technical consultant.

Jack Ward has returned from military service to join the engineering department of Wood Worsted Mill, Lawrence, Mass., a unit of American Woolen Co.

Arthur Wells has resigned as superintendent of Atlantic Mills, Stottville, N. Y.

Obituary

Joseph M. Merrow, 99, president since 1898 of The Merrow Machine Co., Hartford, Conn., died Mar. 27, 1947, in that city. The family business, which Mr. Merrow entered after his schooling, was the manufacture of knit cotton goods, established in Merrow, Conn., about 1838, the first of its kind in the country. In 1888, when the knitting mill at Merrow was destroyed by fire, the business was moved to Norwich, where, under the name of J. B. Merrow & Sons, the entire facilities were devoted to the manufacture of crochet sewing machines which Joseph M. Merrow had developed in a small machine shop maintained in conjunction with the knitting mill at Merrow. In 1893 the company moved to Hartford, where it was incorporated the following year as The Merrow Machine Co. with Joseph M. Merrow and his brother, the late George Woodbridge Merrow, the principal incorporators. Mr. Joseph M. Merrow became the president of this company after the death of his father in 1898, and held this position until his death.

Tom Parkin, 76, president of the Parkin Yarn Mill, Pawtucket, R. I., died at Eden Park, R. I., Apr. 1. Born in England, he came to America at age 17, and was connected with woolen and yarn mills in Massachusetts and Rhode Island for many years. He was a past president of the National Association of Woolen & Worsted Overseers and of the Arlington Mills Overseers Association.

Frank E. Arnzen, 57, vice president of Lonsdale Co., and previously connected with Fall River Bleachery for 27 years and the Lincoln Bleachery & Dye Works, for four years, died at Fall River, Mass., on Apr. 13.

George F. Robbins, 69, former president of Kutztown Silk Corp., Kutztown, Pa., died

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WAK INDUSTRIES CHARLOTTE, N. C.

NEWS ABOUT MEN

Apr. 7 in Williamsport, Pa. He was associated with the textile manufacturing business for almost 50 years. He headed the Robbins & Mumma Silk Corp. which operated in Allentown, Pa. from 1933 to 1935, and was at one time general manager for the D. G. Derry Corp.

Fritz A. Burghardt, vice president and a director of Botany Worsted Mills, died Mar. 27 in New York. He had been with Botany 40 years and was scheduled for retirement April 1. He was a technical textile expert and began with Botany in 1906 as a men's wear designer. He became a director in 1929 and vice president and assistant general manager in 1931.

Wm. C. Ryckman, 65, vice president and general superintendent in charge of production at Lane Cotton Mills Co., New Orleans, La., died Mar. 11.

Tollie Chester Barber, 57, president of Barber-Allen Hosiery Mills, Mount Airy, N. C., died in Stuart, Fla., recently.

Barney Barton Hayes, 72, of Lenoir, N. C., head of a chain of textile manufacturing plants, died recently. He was a large stockholder in Hayes Cotton Mill, Lenoir; Moore Cotton Mill, Valmead; and the Hudson and Caldwell Cotton Mills at Hudson, N. C. Recently, Mr. Hayes and associates bought the Steel Mills at Lenoir for around $750,000.

Herbert O. Barnes, 74, president of Textile Age, Inc., New York, died early in April. He spent all his business life in textile publishing, joining J. H. Bragdon, founder of *Textile Manufacturers Journal*, as a young man. That paper is one of the antecedents of the present TEXTILE WORLD. He retired from that publication about 18 years ago.

Samuel N. Selman, 51, in charge of Fox Chase Knitting Mills, Inc., Fox Chase, Pa., died Mar. 13. He was with Fox Chase for 19 years.

William T. Godley, 76, one of the founders in 1937 of Cashmere Corp. of America, Cleveland, Ohio, died in Cleveland Apr. 7. A native of Bradford, Yorkshire, England, he came to the U. S. in 1905 and served as a technical expert for 25 years prior to 1937, for Cleveland Worsted Mills Co.

Wm. Roy Brookband, 39, secretary of Hanes Hosiery Mills Co., Winston-Salem, N. C., died recently.

Isaac Edinberg, 77, long identified with the woolen industry in Worcester, Mass., died recently. A native of Russia he came to Worcester 62 years ago. He was proprietor of I. Edinberg Wool Waste Co.

Grover C. Barfield, 63, vice president of Swift Mfg. Co., Columbus, Ga., died recently.

Harmon O. Nelson, 67, an executive of Whitin Machine Works, Whitinsville, and an expert on twisting machinery, died recently. He had been with Whitin Machine Works for 48 years, much of that time heading the engineering department.

William M. Wentz, 45, a member of the technical laboratory staff of the E. I. du Pont de Nemours & Co.'s Organic Chemicals Dept., died recently in Worcester, Mass. He was widely known for his research on dyestuffs applications, most recently for the Multi-Lap process of continuous dyeing of wool goods.

Richard Hayes Thatcher, 43, a Rayon Div. salesman of E. I. du Pont de Nemours & Co., at Philadelphia, died Mar. 28.

Dr. Herbert F. Whalen, group leader of lacquer research at Monsanto Chemical Co.'s Merrimac Div. plant, Everett, Mass., died Apr. 9.

Dorothy M. Hobson, 60, assistant treasurer of Pepperell Mfg. Co., Boston, Mass., and a certified public accountant, died at Brookline, Mass., Apr. 13.

Thomas Tindle, 69, manager of the Merit Underwear Mill, No. 2, Shoemakersville, Pa., died recently.

W. N. Williams, 69, former superintendent of Rex Mills, Gastonia, N. C., died Apr. 2 at Cherryville.

Samuel Ross, 82, president of the International Mule Spinners Union AFL for the last 57 years, died Apr. 5 at New Bedford, Mass. He also served on the board of the New Bedford Textile Institute since the founding of the school 47 years ago.

PENICK & FORD, LTD., INCORPORATED

CORN STARCHES, DEXTRINES, GUMS, CORN SUGARS & SYRUPS

NEW YORK, N. Y. - - - - CEDAR RAPIDS, IOWA

SOUTHERN OFFICES: ATLANTA, GA. - - - - SPARTANBURG, S. C.

John:
The Starches and Gums which Penick and Ford manufacture for polishing twine and cord have been developed for every phase of this operation.
Lets try their recommendation.
Jim

Style 20

LANE

The IDEAL BASKET for

LOOPERS

SEAMERS

RIBBERS

GENERAL

W. T. LANE & BROS., INC.

Manufacturers : POUGHKEEPSIE, N. Y.

TESTED IS TRUSTED

Making CLOSE CONTROL a routine

Through the use of *Scott Testers, you maintain close control of materials and manufacture so that potential troubles are stopped before they start.

*Registered SCOTT TESTERS Trademark

SCOTT TESTERS, INC. 95 Blackstone St. Providence, R. I.

Standard of the World

BLOW OUT

dust, dirt and oily fuzz with the TORNADO Portable Electric Blower. Keep motors, shafting, machinery clean—cool — smooth - running — with a tremendous blast of clear, dry concentrated air which removes all accumulations. Used anywhere in the plant. Plugs into any electric outlet. Produces an air stream with a velocity of 295 m.p.h.

Write Today for Literature or Free Demonstration.

Learn how you can reduce maintenance and repair costs, and keep your equipment operating smoothly at full capacity.

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BREUER ELECTRIC MFG. CO.

5086 N. Ravenswood Ave., Chicago 40, Ill.

ALL STEEL ECONOMY BALING PRESSES

ALL SIZES FOR ALL PURPOSES

LARGEST LINE BUILT IN U.S.A.

ECONOMY BALER CO., DEPT. J ANN ARBOR, MICH., U.S.A.

REPRESENTATIVES:

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NEW ADVERTISEMENTS received by 10 A. M. June 5th will appear in the June issue, subject to limitation of space available

POSITIONS VACANT

(Additional Positions Vacant ads on the opposite page)

WANTED: GROWING southern textile school desires man with textile degree to teach design and weaving courses. Practical mill experience desirable. Excellent opportunity for qualified person. Reply stating training and experience. P-175, Textile World, 330 W. 42nd St., New York 18, N. Y.

MAN EXPERIENCED on inside work. Double woven machines. National firm of long established record in the knitting field. Splendid opportunity for advancement for the man who qualifies. Write Double Woven Corp. of America, Sherwood & Reeve Street, Dunmore (Scranton) Pa.

WANTED: YOUNG chemist for wool felt research and product development laboratory Connecticut location. Graduate chemist with minimum 2 years experience required. Starting $3,000. P-215, Textile World, 330 W. 42nd St., New York 18, N. Y.

MILL MANAGER and Superintendent. Jacquare mill, 100 looms. Excellent salary, bonus, 1 family house. 100 miles from Washington D. C. P-216, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED: SUPERINTENDENT or Assistant Superintendent Bradford Worsted Spinning Mill Experienced both fine and coarse wools and other fibers in all yarn manufacturing operations. Good production man with ability to develop high type labor-management relationship. Give complete resume of experience, salary expected, etc. All replies treated in strict confidence. P-217, Textile World, 330 W. 42nd St., New York 18, N. Y.

SELLING OPPORTUNITY AVAILABLE

SALESMAN WANTED Georgia, and Alabama territory to represent old, established company manufacturing leather belting, loom strapping, and mechanical leather. Commission basis. No objections non-conflicting lines. SW-218, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED
WEAVING
MILL SUPERVISOR

An unusual and most promising position offered to one capable of completely supervising and running a small rayon weaving mill operating Draper XD Dobbi Looms.

This is a splendid opportunity for association with a nationally known organization.

Please state in brief, details of experience and background.

P-194, Textile World
330 West 42nd St., New York 18, N. Y.

Weaving Mill Superintendent

As assistant to plant manager. Textile school graduate preferred, modern well-established rayon weaving mill in Pennsylvania. Practical weaving and preparatory experience essential. State complete background, qualifications, age, and salary. Steady position and fine opportunity for capable man. Replies will be held strictly confidential.

P-201, Textile World
330 West 42nd St., New York 18, N. Y.

POSITIONS WANTED

PERSONNEL MANAGER. Many years practical experience in Southern Textile Plants plus recent college course in modern personnel management. PW-141, Textile World, 330 W. 42nd St., New York 18, N. Y.

MIGHT BE Available to concern who knows its needs. Thirty-seven (37) years of age. Eighteen (18) years of manufacturing experience, both hard and soft goods. Chief industrial engineer for ten (10) years. Interested only in interview with prospective employer. PW-180, Textile World, 330 W. 42nd St., New York 18, N. Y.

TEXTILE TECHNICIAN, 36, wide experience in cotton spinning. Also, experience, plant erecting trough production. American and European machinery knowledges. Can furnish references. PW-184, Textile World, 330 W. 42nd St., New York 18, N. Y.

YOUNG MAN, veteran, with general textile background, plus several years (woolen) sales experience desires position with opportunities. Navarre 8-2143, Brooklyn, N. Y., M. J. Rose.

ENGINEER. GRADUATE English schools seeks permanent position with company manufacturing either textiles or machinery. Would act as plant engineer, purchasing and welfare or sales. Sound training and 28 years experience on preparation-weaving and specialising in finishing machinery. At present acting as consulting engineer, sound reasons for seeking change. PW-219, Textile World, 330 W. 42nd St., New York 18, N. Y.

RIBBON MILL MAN

Now employed, with twenty years experience as executive, desires position as superintendent or the like.

PW-226, Textile World
330 West 42nd St., New York 18, N. Y.

Available
EXECUTIVE'S ASSISTANT

Phila. Textile Institute graduate with 13 years practical experience in shaft and Jacquard fabrics. Well versed in fabric designing, layout, costing, analysis, production control and mill management. 34 years of age.

Apply PW-211, Textile World,
330 W. 42nd St., New York 18, N. Y.

TEXTILE ENGINEER

earning $1,000,000 (One Million) a year For a Giant Industrial Concern is YOURS for $8,000 plus future

PW-207, Textile World
330 West 42nd St., New York 18, N. Y.

POSITIONS WANTED

YOUNG EXECUTIVE, 30, background and experience in over-all management, financial administration, accounting, cost control, personnel management, training programs; college instructor, B.S. and M.S. Able and aggressive. Interested opportunity assistant plant manager or similar position. PW-220, Textile World, 330 W. 42nd St., New York 18, N. Y.

WAGE AND Salary executive available. Wide experience including job evaluation. Age 37. Salary open. PW-221, Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

TECHNICIAN DIRECTOR dyeing. Frenchman, 34. 12 years experience with all textiles producted by large Swiss company; high references. Wishes to leave country. Reply: 282/598 Stranger, Rue Vivienne 17, Paris.

CHEMIST, B.S.: Graduate work towards M.S. Several years experience as head of size research laboratory. Has knowledge and experience with textile oils, resin impregnation and textile machinery. Desires position in field development or sales. Location immaterial. Age 25, single. PW-222, Textile World, 330 W 42nd St., New York 18, N. Y.

SELLING OPPORTUNITIES WANTED

WHOLESALE DISTRIBUTORS and importers occupying their own building seek for import into Canada all types of dress trimmings, textiles, braids and laces, buckles and buttons. Highest of references both banking and trade will be given to interested parties. RA-143, Textile World, 330 W. 42nd St., New York 18, N. Y.

AUSTRALIAN BUSINESS man arriving New York, May seeking connections or representation of reputable manufacturers of piece goods (cotton and art silk), novelties etc. Best connections to importers, warehouses, chain stores throughout Australia. First class references. Reply RA-223, Textile World, 330 W. 42nd St., New York 18, N. Y.

BUSINESS OPPORTUNITIES

WANTED: To make small investment in small weaving mill in the South, and have charge of operation by the yard. Pure silk or any type rayon broad-cloth. Twenty-six years experience in this work. First class fixer on C & K and Draper automatic looms. Best of references. BO-224, Textile World, 330 W. 42nd St., New York 18, N. Y.

FABRICS DESIGNED with samples-woven on own looms by expert technicians. N. Y. area. BO-225, Textile World, 330 W. 42nd St., New York 18, N. Y.

AUSTRALIA

Well established firm of Australian commission agents with large clientele desires representation of rayon and cotton manufacturers and converters for dress, lingerie and furnishing materials.

Company's orders for American textiles last six months exceeded 1½ Million Dollars. *Principal visiting U. S. A. shortly.*

Address: MSD, **FRANK KIERNAN & CO.**
ADVERTISING AGENCY

41 Maiden Lane, New York 7, N. Y.

MEN WANTED
POSITIONS OPEN

Vice President for company operating 2 woolen mills
Manager production and labor relations department
Superintendent large woolen mill
Supt., print foreman and colorist screen printing plants
Woolen yarn superintendents
Asst. Supt. starching, finishing, dyeing cotton piece goods (North)
Asst. Supt. worsted yarn mill, French system (North)
Knitting mill executive with good education and practical experience in charge of knitting, dyeing, finishing, etc.
Asst. Supt. narrow fabric mill
Textile school graduates with or without practical mill experience
Chemist and laboratory men
Overseers spinning, mules and frames
Overseers, second hands, fixers experienced on twisted paper fabrics
Foreman or forelady rayon winding (So. America) $400-600 month
Woolen finisher, preferably one with knowledge of dyeing
Young man experienced in jute, sisal and Manila hemp (N. Y. City)
Overseer worsted weaving
Sewing Machine Fixers
Paper box manufacturing foreman
Woolen-worsted cloth examiner, $64.
Overseers carding (cotton and woolen)
Master Mechanics and Plant Engineers
Fabric development man (rayons)
Designers and assistant superintendents, woolens and worsteds
Velvet dyer
Corduroy finisher
Jacquard designer
Crane machine fixer and operator
Loom fixers (cotton, woolen, worsted and silk)
Tompkins fixer-foreman
Jacquard loom fixers
Second hands and fixers all depts.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington St. Boston, Mass.

Over 45 Years Confidential Employment Service for Textile Mills

CONSULTING AND DESIGNING ENGINEER
FOR TEXTILE PLANT WORK

Large engineering organization wants man with following qualifications:

AGE: Between 40 and 45

EDUCATION: College Graduate Mechanical and Structural or Civil Engineering, preferably with addition of Textile School Courses.

EXPERIENCE: At least fifteen years experience in layout, design and supervision of construction of textile projects.

Furnish full information on education, experience, salary desired and recent picture with first letter. All applications will be kept confidential.

P-205, Textile World
330 West 42nd St., New York 18, N. Y.

PRODUCTION DYE CONTROL

A man educated in the chemistry of dyeing fabrics. Must have had practical experience in the operation and control of commercial dyeing, particularly in the dyeing of narrow fabrics. Must also be experienced in direct, developed and vat dyeing. Salary open.

P-206, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED
RAYON LOOM FIXERS

For the South American plants of a large American textile organization. Must be experienced on rayon looms such as the Draper XD and the Crompton and Knowles S-3 Supersilk. Also state experience on cotton looms such as the Draper Model K, L, and E. Excellent opportunities for advancement as these are new plants. Write immediately giving background of training, experience and personal qualifications so that interview can be arranged.

P-227, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED
Industrial Engineers
Textiles

Fully Qualified in Methods Improvement and Time Study.

25-35 Years of Age
Capable of Assuming Responsibility.

P-195, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED
for leading
CLAIM ADJUSTER
New York City rayon converter.

Should be young man with negotiating ability, technical training in weaving, dyeing. State complete information as to schooling and industrial experience, references.

Address

P-202, Textile World
330 W. 42 St., New York 18, N. Y.

WANTED
Cost Analysis
and
Time Study Man
for textile mill (throwing) in Pennsylvania.

Following qualifications desirable:

(a) Industrial engineering training and experience.
(b) Knowledge of time study.
(c) Knowledge of textile industry (spinning, doubling).
(d) Potential leadership and executive ability.

Position considered as training for more responsible management position. State education, experience, references.

P-203, Textile World
330 West 42nd St., New York 18, N. Y.

TEXTILE TECHNICIAN

Young man not over 35 with degree from textile school. Must have some mill experience. Splendid opportunity for advancement. Apply in writing only, stating experience and salary expected.

LIBERTY FABRICS OF NEW YORK, INC.
900 East 229th Street
New York 66, N. Y.

Additional Positions Vacant Advertisements on page 280

Textile Chemist

To assume charge of dyeing and finishing department in modern well-established rayon weaving, dyeing and finishing plant in Pennsylvania. Practical production and supervisory experience essential. State complete background, qualifications, age, and salary. Excellent opportunity. Replies will be held strictly confidential.

P-204, Textile World
330 West 42nd St., New York 18, N. Y.

BUSINESS OPPORTUNITY AND WANTED ADVERTISEMENT ON PAGE 282

EXCELLENT OPPORTUNITY FOR WORSTED YARN SPINNER

who plans to have a steady outlet for his yarn for the future.

Nationally known large woolen mill with own UP-TO-DATE weaving, dyeing and finishing departments, coast to coast selling organization and export division with outlets all over the globe is looking for worsted yarn mill producing weaving yarn, sizes 2/32, 2/40, 64's quality and finer, to organize the produciton of worsted piece goods on a mutual basis.

Our organization is fully equipped to take care of designing, manufacturing and selling (full sample line for next season prepared).

Only good worsted yarn mills producing first-class weaving yarns should reply. All answers will be kept strictly confidential.

Write Box—CW-196

Textile World, 330 West 42nd St., N. Y. 18, N. Y.

WANTED • INDUSTRIAL ENTERPRISE

Large financially powerful diversified organization wishes to add another enterprise to present holdings.

CASH PAID

FOR CAPITAL STOCK OR ASSETS

Existing Personnel Normally Retained

Box 1222, 1474 Bway.,N.Y.18, N.Y.

Large Funds *Available*

for going Manufacturing organizations or Industrial Real Estate.

Box 89, Times Square P. O. Station, New York

Wanted for export to INDIA AND AFRICA

cotton piece goods, prints, ninons, and cotton and rayon threads and yarns. Offers should have concurrence of U. S. export control.

WILLIAM E. SKILLMAN, INC.
Lake Ronkonkoma, L. I., New York

WE BUY WE SELL WE TRADE

CHEMICALS
PHARMACEUTICALS
SOLVENTS • PIGMENTS
WAXES • BY-PRODUCTS
WASTES • RESIDUES

Other materials and supplies

CHEMICAL SERVICE CORPORATION
80A Beaver Street, New York City 5, N. Y.
HAnover 2-6970

CONTRACT WEAVING

Wanted on Hand Looms up to 42 inches wide. Woolen or Worsted.

STEPHENS HAND WEAVERS
Box 773 Haverhill, Mass.

COMMISSION WARPING & WINDING

FROM

SKEINS, CAKES, SPOOLS AND CONES

EUREKA WARPING & WINDING COMPANY
21 Lewis Street Pawtucket, R. I.

DYESTUFFS

Will buy your surplus and obsolete dyes and chemicals for cash.

NEW ENGLAND PRODUCTS CO.
91 Oliver St. Boston, Mass.

PROFESSIONAL SERVICES

LANCASTER, ALLWINE & ROMMEL
Registered Patent Attorneys

Patent and Trade-Mark Practice before U. S. Patent Office.
Validity and Infringement Investigations and Opinions.
Booklet and form "Evidence of Conception" forwarded upon request.
Suite 448, 815-15th St., N.W., Washington 5, D.C.

WANTED PARTY WITH CAPITAL

To go into the shoddy business. Man to understand the business.

BO-229, Textile World
330 West 42nd St., New York 18, N. Y.

YARNS WANTED

Wanted to purchase surplus yarns of all types — cotton, rayon, acetate, nylon, silk, wool, spuns, and blends.

W-947, Textile World
330 West 42nd St., New York 18, N. Y.

ABERT CO.
Consultants on Textile Machinery

Complete Installation and Operation of Cotton and Wool Spinning Plants
Also, Machinery and Supplies for Weaving, Spinning & Twisting.
Languages—Spanish & French.
92 Fulton St., N. Y. 7, N. Y.

COTTON - SPINNERS

Which large Spinning Company is interested in a process for spinning flax or flax-tow on the cotton-spinning system. Please reply to

BO-210, Textile World,
330 West 42nd Street, New York 18, N. Y.

Wanted Contractor

To supply monthly allotments of 44 GRAIN SLIVER

W-164, Textile World
520 North Michigan Ave., Chicago 11, Ill.

ROBERT WILKINSON
Fabric Designing Service

Analysis of yarns and fabrics.
Plain, dobby and boxloom weaving drafts made from cloth or written information.
Jacquard designs made from cloth or sketches.
34 Bank St. New Bedford, Mass.

WANTED

Complete Spinning Plant

Wool worsted, from 500 spindles upwards. Good condition. Also cone winders required.

Nirens & Sons Pty. Ltd., 16 Flinders Lane, Melbourne, Victoria, Australia.

COTTON YARNS WANTED

20/1 to 30/1 K. P. 20/1 to 80/1 C.P.
Also 2 ply Mercerized.
Steady Customer. Cash.

ANCONIT CORPORATION
819 Broadway New York 3, New York

P. J. Jackson thought Lowell, Mass., "might" have 20,000 population - someday

PATRICK T. JACKSON was one of a Company which originally developed the property that eventually became the City of Lowell, and the great Merrimac Mills. At that time (1821) it had less than a dozen houses. Another partner was Kirk Boott, an Englishman. For his part in establishing the Lowell Mills, it was reported that English textile manufacturers sent emissaries from England, who attempted to kill him. The first cloth made was so coarse in texture you could shoot peas through it, and cost 37½ cents a yard.

MLC SERVING THE TEXTILE INDUSTRY MLC

1—Giles 30 Stick Skein Dyer
1—C&M 2-cylinder Brushing machine 72"
3—Button Breakers, 2-48", 1-50"
2—45" Textile Finishing Machine Co. 6-bowl Calenders
2—54' x 60" D&F 2-cylinder iron Shoddy Cards with feeders
1—Lot Numerous Card Parts
1—60" P&W Doubling, Boarding and Winding Machine
1—90" P&W De Specking Machine
1—Set 8 Textile Vertical 48" x 23" Dry Cans
1—Set 20 H.P. Butterworth 108" Dry-cans, dryer
1—Reeves Drive, Range 3-1, Size 6, Class G
1—54" x 54" Taylor Wadsworth Batch Type Waste Duster
1—18" Copper Basket Extractor
2—26" Tolhurst Extractors, belt driven
1—30" American Laundry Extractor
5—10" and 60" Tolhurst Extractors
1—45" Dobson & Barlow Cotton Feeder
4—40", 42" E&H Flat Folders with take-up stands
1—100" C&M Flat Folder, motor driven with hydraulic lift and roll-up stand
15—40", 80" Card and Napper Grinders
6—40" Draper Model X Automatic Looms, 45" reed space, lacey tops, with motors
200—40" Draper K Dobby Looms
2—45½" C&K 4 x 1 Dobby Looms, motorized
13—54½" C&K Box Dobby Looms
32—54" R.S. C&K 4x1 Auto. Looms, 20 harness double index dobby head
24—14" Stafford 49½" reed spacer Dobby Shuttle Change Looms, with motors
110—45½" reed space Modified E Draper Looms with lacey tops 3 bank stop-motions, warm take-up, belt driven
1—48" C&K 4 x 4 box Loom, 25 harness, belt driven, friction clutch
2—74" Heavy Duck Looms, roller top, 2 harness

COMPLETE MILL UNITS
A Six Set Woolen Yarn Mill
A Woolen Piece Goods Dyeing & Finishing Plant
48 Loom Rayon Weaving Plant—44" & 46" Looms, etc.
20 Loom Rayon Weaving Plant—46" & 52" Looms, etc.

14—82" C&K 2 x 1 automatic Looms, 8 harness cam motions, motor driven
1—82" C&K 4 x 4 Box Looms, 25 harness, friction clutch drive
10—92" C&K, 4 x 1 Automatic Looms, 8 Harness, Cam Motion Motor Driven
16—92" & 100" C&K 2x2 Box Auto. Looms with Baker 3-mix attachments, 25 harness gem heads
1—19" Tatham Rag Picker
2—80½" and 86" P&W Single Blade Shears
2—#90 Univ. Winders
1—44" C&M Measuring Machine, 60 yd. dial
1—58" Blake Sanded Roll Inspecting, Winding & Measuring Machine
1—64" P&W Measuring and Woolen Cloth Winder
1—66" x 23" P&W 60 yd. Measuring Machine, sanded roll, belt driven
1—66" x 24" P&W AWC Measuring and Folding Machine, 100 yd. counter and folder
3—60" Measuregraph Machines
1—70" King & Gerber Tubing Machine with Veeder-Root counter
1—392 Spindle Smith 2" Gauge Mule
2—240 Spindle D&F 2" gauge, 10 jack spool Drums
4—240 Spindle J&B 1⅞" gauge Mules
1—12 Pole Smith Drum Skein Mercerizer
120—New Leland & Westinghouse ½ and 1 HP 3/60/220V Heavy Duty Motors Also various size Rebuilt Motors
1—61" Woonsocket 2-cylinder Napper, 20 rolls to each cylinder

1—66" Gessner 16 roll single cylinder Napper
1—72" Gessner 18 roll single cylinder Napper
1—80" Woonsocket 36 roll double acting Napper
4—80" D&F 20 roll Single and Double Acting Nappers
1—30 x 30" Mezzera Wool Opener with grid and 25" feed apron, wire good
1—45" 2 roll Padder, rubber rolls
9—40" Kitson Breaker Pickers, Finisher Pickers, and Single Process Pickers, motorized
10—100 Sp. Foster Model 12-12A-21A Tube & Cone Winders.
1—42" Olsham Fearnaught Picker
1—48" Parkhurst Burr Pickers
2—48" C.D. Sargent Burr Pickers
1—54" Werner Single Color Printing Machine
6—52", 35½", 66", Voelker and Gessner Single and Double Bed Rotary Cloth Presses
5—50 spindle Lindsey-Hyde Adjustable Reels
1—60" C&M Single Blade Plush Shear
2—60", P&W Single Blade Woolen Shears
11—65½" P&W 2-blade Shears, Model B
1—76" C&M Double Blade Shears
1—32" Grand Rapids 2-knife Knit Goods Slitting Machine
1—42" Grand Rapids 20-knife Slitting Machine
1—42" C&M Singer with hood
3—Lowell 2' cylinder Slashers
1—32½" D&F Jack Spool Winder
6—Smith and Furbush Spoolers, 44" drums, 48 ends, 44½" long spools with 10" head, with spool stands
1—60" C&M Single Brush Type
3—80 Spindle Hopedale band driven twisters 4½" ring, 5½" ga. Belt driven
3—8-string Hemmer Wool Washers
1—80 Spindle Foster Tube Winder
2—60" P&W Winders with stencil attachment

MACHINERY LIQUIDATING COMPANY
OPA REGISTRATION NUMBER 789
EST. 1923
31-33 West 42nd Street MLC NEW YORK 18, N. Y.
DOMESTIC TELEPHONE PEnnsylvania 6-8014 EXPORT
WAREHOUSES: Paterson, N. J., 9 Godwin St., Tel. SHerwood 2-0373 — Hawthorne, N. J., 35 4th Ave., Tel. HAwthorne 7-9661
SPECIALISTS IN SELLING AND PURCHASING TEXTILE MACHINERY, ACCESSORIES AND MILL SUPPLIES

PHONE 3-7497

Wm. Rabinowitz & Sons

214-222 HAMILTON STREET · ALLENTOWN, PA.

PHONE 3-7498

YARN

6600 Lbs. 50/2/3 C. P. Nat. Cotton on tubes—glazed
2600 Lbs. 30/2/3 Nat. Cotton on tubes—glazed
50,000 Lbs. 50/1 C. P. Nat. Cotton on Cones 27-28 Turns
1000 Lbs. 75 Den. Bemburg, Cones Thrown to 3 Turns
40,000 Lbs. 225-2-5 Fiberglass Yarn Nat. on 2 Lb. Cones

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1—CALENDER, Friction, 3 roll, 43½" face.
1—CALENDER, Cotton, 50" face, 3 roll unit.
1—CALENDER, Silk, Hydraulic, 60" face, 4 roll unit, pump, motor driven.
2—CALENDERS, Cotton, 80" face, 5 roll units.
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1—CAN DRYER, 12 tinned steel cans, 144" x 23" dia.
1—CAN DRYER, tinned copper, 23 cans, 86" x 23" dia.
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2—DRYERS, LOOP, 82" stationary sticks, motor driven.
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2—MANGLES, 40" and 80" units, 2 roll machines.
3—MANGLES, 80" units, 3 roll machines.
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1—NAPPER, 86", D.A., 36 roll, clothed complete.
2—NAPPERS, 90", D. A., 36 roll, ball bearing, late model, clothed complete.
2—NAPPERS, Knit Goods, 72" and 90" wide, 20 roll units.
1—PADDER, 75" face, 2 rolls, both rubber.
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1—SHEAR, Picking, 45" with 3 sets of cutting parts.
4—SHEARS, 45" to 68", Single and Double Blade.
1—SCOURING UNIT, RAW STOCK, 2 bowls, 36" width, with automatic Hopper Feed and Raw Stock Dryer to handle capacity of same.
1—SCOURING UNIT, RAW STOCK, 3 bowls, 38" width, with automatic Hopper Feed.
2—SLASHERS, Cotton, 7' x 5' dia. cylinders.
1—TENTER FRAME, 40' long x 55" width, S.S. Plates and inserts, gas burners, Batcher takeoff with Measuring Clock.
1—DOUBLE TIGER, 66".
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4—sets 3 cylinder WOOLEN CARDS, all iron, 48" x 48", with Rub Condensers, Hopper Feeds, clothed, etc.
1—single cylinder CARD, 48" x 48", with Hopper Feed, Rub Condenser.
1—CLEANER, with Buckley Blade Beater, spiralwhirl type.
2—CLEANERS, Vacuum, Mill type, motor driven.
2—CONDENSERS, RUB for 60" Card, with 12" ring doffers.
1—CONDENSER, Tape for 60" Card, 2 bank unit.
1—DOUBLER, 80 spindles, equipped for two (2) ends with space for three (3) additional ends, motor driven.
1—DUSTER, 60" Wool, Cone cylinder, fan, etc.
66—Deliveries of DRAWING, 10"-12" coilers.
2—FEEDS, 40" and 54", automatic Hoppers for Cards.
2—FEEDS, 40" and 48", automatic Hoppers with Combs for Pickers.
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2—GARNETTS, 3 cylinder, 60" wide x 30" dia.
1—GARNETT, P. & S. Duplex, 4 cylinder unit, 60" wide x 30" dia. Hopper Feed, late type.
17—INTERMEDIATES, 9x4½, 72 and 112 spindle units.
2—JACKSPOOLERS, 48", for 60 ends, pick clocks and compressor rolls.
13—NARROW FABRIC LOOMS, 6 to 54 space, 32 hook dobby.
16—NARROW FABRIC LOOMS, 14 space, cam head, equipped to make 3" webbing.
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48—DRAPER D LOOMS, 70" cloth, 20 harness, belt driven.
36—DRAPER D LOOMS, 78" cloth, 16 harness, motor driven.
66—DRAPER MODEL E LOOMS, 42" cloth, 2 harness, belt driven.
90—DRAPER MODEL E LOOMS, 44" R.S., 2 harness, motor driven.
40—DRAPER MODEL E LOOMS, 28" R.S., 8 harness, belt driven.
12—DRAPER MODEL E LOOMS, 44" cloth, 4 harness, motor driven.
144—DRAPER MODEL E LOOMS, 45" R.S., 5 harness, belt driven.
150—DRAPER MODEL E LOOMS, 60" cloth, 2 harness, belt driven.
90—DRAPER MODEL K LOOMS, 40" cloth, 25 harness, belt driven.
200—DRAPER MODEL K LOOMS, 42" cloth, 25 harnes, belt driven.
40—DRAPER MODEL I. LOOMS, 90" cloth, 2 harnes, belt driven.
36—C. & K. LOOMS, 55", 4x1 automatic, 25 harness, motor driven.
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36—C. & K. 82", 4x1 automatic, 25 harness, motor driven.
10—C. & K. 92" 4x1 automatic, 12 harness, arranged for motor drive.
7—MULES, 2—240 spindles each, 2⅛" gauge, 2—288 spindles each, 2—480 spindles, 2—300 spindles, 2" gauge, 2—480 spindles each, approx. 2" gauge.
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1—PICKER, BURR, 48" x 32" dia. cylinder, Feed Table and Blower.
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3—SLUBBERS, 12x6, 68 spindles each.
15—SPEEDERS, 7x3½—108, 120, 144, 160, 176 spindle units.
42—SPINNING FRAMES, 224 spindles each, 1 13/16" ring, 2¾" gauge, band driven spindles, motor driven.
16—SPINNING FRAMES, 208 spindles each, 1 13/16" ring, 2¾" gauge, band driven spindles, belt driven.
3—SPINNING FRAMES, 240 spindles each, 1⅝" ring, 3⅛" gauge, band driven spindles, belt driven.
36—SPINNING FRAMES, 224 spindles each, 1¾" ring, 2¾" gauge, band driven spindles, belt driven.
30—SPINNING FRAMES, 208 spindles each, 1 13/16" ring, 2¾" gauge, band driven spindles, belt driven.
84—SPINNING FRAMES, 192—204 spindles units, 2¼" ring, 3" gauge, band driven spindles, belt driven.
9—TWISTERS, Dry, 224 spindles each, 1½" ring, 2¾" gauge, band driven spindles, motor driven.
9—TWISTERS, Dry, 224 spindles each, 1¼" ring, 2¾" gauge, tape driven spindles, belt driven.
2—TWISTERS, Dry, 156 spindles each, 3½" ring, 5" gauge, tape driven spindles, belt driven.
9—TWISTERS, Wet, 108 spindles each, 5½" ring, 7" gauge, tape driven spindles, belt and motor driven units.
2—TWISTERS, Fancy, 192 spindles each, 2" ring, 3" gauge, band driven spindles, arranged for motor drive.
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6—WINDERS, FOSTER, Tube, #25, from 1 to 5 ends, motor driven.
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BUTTON BREAKER, V.V. 50"
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CALENDER, Kasterinsky 36" for knit goods
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DRY CANS, set of 16, 72" x 23", dia. horizontal
DRY CANS, 7 Morrison 48" high pressure
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DRYER, P&S Loop
DRYER, Pin, Kenyon 5 tier
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MOTORS, ¾ to 5 HP AC/DC 220 volt
PAD, 3 roll Hydraulic
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Sherwood 2-6577

FOR SALE

BTS

2—45" Single Process Pickers—F5 Feeder, S-L breaker and finisher sections, belt drive.
1—Foster #25 Doubler 100 spindles, arr. for motor drive.
2—Foster #30 Winders 100 spdles. cones or tubes, arr. for motor drive.
2—48" Extractors copper basket, Tolhurst & Broadbent.
1—F&J Twister 208 spdl. 3½" ga. 2¼" rings, tape drive, motor drive 550 volts.
1—Butterworth Mercerizer 50"—with Foxwell air guides and expander, with 60' frame 50" wide top opening clips.

BOBBINS - SPOOLS - SUPPLIES

Send us list or phone Fall River 7-9031

BAY STATE TEXTILE CO.
220 HARTWELL STREET • FALL RIVER, MASS.

NARROW FABRIC PRINTING EQUIPMENT

Complete plant in operating condition consisting of:

1—6 color 14" Printing Machine

1—6 color 18" Printing Machine

both driven by 220 V 3 ph 60 cyl. motor thru shafting and belting, each complete with variable speeds, rubber blankets and 3 cans.

1—Washer — 3 compartment, 3 squeeze, new stainless steel tank, followed by 8 copper dry cans.

1—Steamer, 1 Forcing jack, 1 Beamer

More than 100 engraved copper rolls.

WILLIAM R. KENT

11 Kent Court Passaic, N. J.

FOR SALE

4 sets of 3 cylinder, 60 inch Woolen Cards.
6 Spinning Mules, 1⅞ inch gauge
1 Foster #30 cone winder
3 Warp Compressor Jack Spooling Machines (32¼ inch between ends)

FS-198, Textile World

330 West 42nd St., New York 18, N. Y.

FOR SALE

Heathcote 120 rd. Dryer Pin Type, 96" max. width
1—D. & F. Fearnaught Picker
1—36" Schofield Lumper
1—Schofield Rag Picker
1—36" Sargeant Burr Picker
1—J. Hunter 8 string Cloth Washer
2—J. Hunter Mod 26B S.S. Lined Fulling Mills
1—J. Hunter Single Strand Soaper
2—Spencer Automatic Oilers
1—L. & G. 32 sp. Cop Winder from skeins
1—Foster Mod. 12 Tuber from skeins
6—Foster Mod. 101 Coners, Motor Driven
Universal No. 50 and 90 Winders—Rebuilt
1—Universal No. 180 Superconer
2—Altemus 6" Drum Spoolers
6—C. & K. Intermed. 72" Looms, 4x4 Box
2—Altemus Long Chain Beamers
2—Altemus Warpers, Pinless
1—P. & W. 66" Measuring, Rolling & Doubling Machine
1—Windle 72" Fold. & Meas. Machine
1—Gessner 18 roll, 80" D.A. Napper
1—McCreary 10 roll Knit Goods Napper
2—Smith-Drum Mercerizing Ranges
1—K. & B. Full Decater, 72"
2—Royal 600 hook Card Cutters
1—L & G Chenille Cutter
2—S.F. Yarn Sizers & Dry Cans
2—P & W 66", Plush Shears
1—P & W Mod. "B" Double Cloth Shear
2—Voelker 65" Cloth Press
1—Gessner 66" Jumbo Cloth Press
1—E & H Flat Yard Folder, 58"
1—Woonsocket 80", 20 roll D A Napper
1—Fletcher 60" Underneath Motor Driven extractor
1—Trojan 48" Direct Motor Driven Extractor
1—Set 72" Rubber covered Squeeze Rolls
1—Airlay Warp Dryer
1—Inspecting, Measuring & Tubing Machine 60"

Disposition of Machinery is our business. Your listings will have our closest attention

FRANK W. WHEELER CO.

1837 E. Ruan St. Philadelphia 24, Pa.

PHONES Jefferson 5-4771-4772

See

BOOST PRODUCTION — CUT YOUR COSTS

IMMEDIATE DELIVERY

200,000 NEW FIBRE HEAD shipping and winding spools. 3⅜" traverse. 3¼" fibre heads.

100,000 FIBRE HEAD SPOOLS. 3⅛" traverse. 3" fibre heads. Excellent condition.

27,500 FIBRE HEAD SPOOLS. 4⅜" traverse. 4" fibre heads with brass bushings. Spools like new.

20,000 METAL HEAD SPOOLS. 4" traverse. 3" heads.

32 Nylon Pirn trucks
1,000 Self stacking spool trays *(wide space)*
1,000 Steel quill boards
570 New Whitin pirn and bobbin holders

FOR PROMPT DELIVERY

RIBBON—3,500 lbs. bulk ribbon remnants. Various lengths and colors.
VENETIAN BLIND TAPE—7,000 yards. Mostly white. 6 feet lengths.
REELING MACHINES
4—Whitin reelers. Complete with clocks. Two adjustable 54 to 72"; and two 54".
1—Motorized Fletcher extractor, 36".
2—Skein dye & soaking machines. Complete with motorization, pumps, electrical elements, etc. Stainless steel.
5—Atwood large package double deck twisters.
1—Motorized Whitin twister. 3" rings.
1—Universal motorized cone winder. 96 spindles with emulsion troughs.
1—Atwood motorized 8 fly reeling machine. (44" skein) twin 1 h.p. motorized.
5—Sipp double deck skein winders. Oilless bearing fingers, 160 spindles each machine.
6—Atwood 5B doubler twisters.
6—Universal motorized cone winders.
1—Motorized Buffalo Blower.
3—Novelty twisters. Fales & Jenkes. 2¼" ring. 218 spindles each machine. Double rolls.
200,000 Fibre head spools. Like new, 3⅜" trav., 3¼" heads.
100,000 Fibre head spools, 3⅛" trav., 3" heads.
20,000 Tin head spools, 4" trav., 3" heads.
25,000 Headless package spools, 6" long, 2 5/16" dia.
10,000 7" paper cops with metal feeler.
27,500 Fibre head spools, 4⅜" trav., 4" heads.
6,500 Fibre head spools, 4¾" trav., 3½" heads.
2,500 Fibre head warp rolls, 9½" trav., 6" fibre heads like new.
2 MILLION silk, cotton, wool, nylon, wood, fibre head, bobbins, quills, beams, etc.
1,000 Steel quill boards.
1,350 Mossberg pressed steel narrow-fabric beams.

LEATHER BELTING

PLY	LENGTH	WIDTH
3	59' 7½"	24"
3	128' 10½"	18¾"
4	62' 10"	20"
4	122"	21½"

All the above machinery and equipment is offered subject to prior sale. Samples and detailed information will be given upon request.

Always interested in good used textile machinery—spools—bobbins—beams, etc. What have you to offer

PENNSYLVANIA SPOOL & EQUIPMENT CO.

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Allentown, Emaus } Pa.

MAIN OFFICE
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P. O. Box 1235

Phone 3-8963
3-4301

PLANT LIQUIDATION

We have purchased and are now liquidating all the machinery and equipment of the Crew Piece Dye Co., Inc., 187 Franklin Street, Paterson, New Jersey, consisting of:-

Palmers	Button Breakers
Tenter Frames	Special Finishing Machines
Calenders	Mixing Kettles
Dry Boxes	Jiggs
Dry Cans	Dye Becks
Cotton Back Filling Machine	Extractors
Quetches	French Boil-off Machine
Beamers	Misc. Equipment
Tubers	Office Equipment

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DOMESTIC Moe Blank TEXTILE MACHINERY **EXPORT**

523-525 E. 18th ST. PATERSON 4, N. J.

FOR SALE!

20—H. & B. (Accrington) 45" Cards, 12" coilers
1—Barber-Colman model "K" Tying-In Machine
1—Butterworth 50" Cloth Mercerizing Range
1—Winsor & Jerauld 60' long Tenter, 50" cloth
1—Vertical set 21 Copper Dry Cans, 23"x101" face

JAMES E. FITZGERALD
Textile Machinery
10 Purchase St. *Tel. 8-5616* FALL RIVER, MASS.

COTTON SPINNING UNIT FOR SALE

1—Bale Breaker
1—Vertical Opener
1—Screen Section
1—Single Process Kitson Picker
20—Pette Cards, 40" Wide, 12" Coiler, Good Clothing and Bearings
30—Deliveries of Drawing Saco-Lowell, 1916
3—Slubbers, 11x5½, Whitin 1927, 68 Spindles Each (In excellent shape, flyers and spindles having been reworked in 1947)
2—Speeders Whitin Woonsocket 1927, 8x4, 144 Spindles Each (In excellent shape, flyers and spindles having been reworked in 1947)
4—Providence Speeders, 8x4, 144 Spindles Each, good condition
24—Frames of Spinning Conventional Draft 3" Gauge, Fales & Jenks 1910 22 With 216 Spindles per frame, and 2 With 228 Spindles Per Frame, Total 5,208 Spindles
1—Foster Winder No. 101, 100 Spindles, motor driven including motors

All the above machinery except the winder is belt driven and will be delivered with all supplies and parts belonging to it.

Machinery now in operation

FS-193, Textile World
330 West 42nd St., New York 18, New York

MACHINE TOOLS

DRILLS
3' 9" Cinc.-Bickford, Mtr. on arm-1942 Mfg.
3' 9" Avey Sensitive Radial
16" Sipp—4 spindle—T&L Dr.
16" Allen—4 spindle—T&L Dr.
Natco D5 Multiple—Mtr. Dr.
16" Can.—Otto Floor & Bench—110/1/60—NEW
21" Can.—Otto—BG—Upr.—Sl. Head—NEW

GRINDERS
Reid #2C Hand Feed Surface—1942 Mfg.
6x18 Monarch Surface—Hand—Mtr. Spdle.
14x14x48 Abrasive Surface—Mtr. Dr.
#2 Cincinnati Centerless—Filmatic—1942 Mfg.
#25 Heald Rotary Surface—M.D.

LATHES
16/20x58" Lodge & Shipley-Sel. Head—Mtr. Dr.—1942 Mfg.
16"x6' Sebastian 8-speed—Mtr. Dr.—NEW
16"x6' Lodge & Shipley—4 speed—Mtr. Dr. QCG
36"x15' American QCG—Belt Dr.
10"x24" Logan Bench and Floor—NEW
#2 Warner & Swasey—4 Sp. Drive—MD

MILLING MACHINES
Van Norman #22L with extras
#2M Cinc. Plain Horiz.—Mtr. Dr.—Vert. Attach.
#2S Van Norman—Plain Horiz.—PRT—1942 Mfg.
#2A B & S Double Overarm—Universal—Mtr. Dr.—Vert. attach.—all geared
#2G Kempsmith Universal—Div. Hds.—1943 Mfg.
#2MH Cinc.—Plain Horiz.—PRT—1942 Mfg.
#3 Garvin Universal—Mtr. Dr.—Vert. Attach.—Div. Hds.
#3 Cinc.—Plain Horiz.—PRT—1942 Mfg.
#3 Ohio Universal—Belt Drive
#2K K & T Vertical—PRT—1942 Mfg.
#5 Cinc. Vertical—PRT—1942 Mfg.
Nichols Hand—Mtr. Dr.—1942 Mfg.
Miller & Crown. Hand—Mtr. Dr.—1941 Mfg.

PRESSES
12-ton U. S. #1 Inc.—MD—NEW
5-ton Perkins Incl.—MD—NEW
#3K Perkins Screw—NEW
#10 & #12 Famco Foot—NEW
#2 & #3 Arbor—NEW

SAWS
#4B Cochran—BLY Cold
6x6 L-W Toledo Hack—MD—NEW
8x16 Kalamazoo—MD—Metal Band—NEW

SHAPERS
16" Gemco—PRT—NEW
16" Cincinnati—BG—Mtr. Dr.—P F to head
28" American—all geared—SPD
7" Logan—110/1/60—Floor Type—NEW

SHEARS
36" Pexto Power Squaring—MD
42" #7242 Whitney Power Squaring—MD—NEW

MISCELLANEOUS
Die Filer, Thiel #3—Mtr. Dr.
Die Filer, Harvey EL Butterfly—NEW
Planer, 30x30x8' Whitcomb—Box Bed—Mtr. Dr.

UNITED MACHINERY & TOOL CORPORATION
31 Hermon St., Worcester 8, Mass.

Two automatic dusters one a two cylinder machine ball bearing, the other a single cylinder machine. One Schofield automatic duster all ball bearing, one Scofield Worker picker 36" four Barker twin apron rub 60" with 20" ring doffers with 40 good ends.

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FOR SALE

First Class Modern Running Condition 26½ ft. long—13½ ft. wide—13 ft. long. Trane Fin Type Heaters—Six sections—Loop Type—Motors, etc.—Complete Equipment — Revolving Poles.

Inspection any time by appointment.

SANCO PIECE DYE WORKS
INCORPORATED
PHILLIPSBURG, N. J.
Telephone Phillipsburg, 5-2116

COMPLETE MILLS

Cotton

1—16,000 spindle Spinning & Weaving
1—27,000 spindle Spinning & Weaving
1—20,000 spindle Spinning & Weaving
1— 3,400 spindle Spinning
1— 5,000 spindle Spinning

Woolen & Worsted

1—6000 spindle woolen and
6000 spindle worsted spinning
1—1500 spindle worsted spinning

Knitting Plant

4—Supreme 18", 18 cut, 24 feeds
1—Brinton 18", 18 cut, 48 feeds
1—Katrinsky steam finishing machine
All accessories and motors.

CARDING, SPINNING & WEAVING

Carding

40—Pettee 40", 10" coilers
30—Pettee 40", 12" coilers
14—H & B 40", 12" coilers
2—Sets 3 cylinder worsted 54" x 54"
3—Sets 3 cylinder D&F 48" x 48" Woolen

Spinning

60—F&J Frames, 3½" long draft
20—Whitin 2½" ring
24—F&J, 3" gauge

Speeders

8—Woonsocket frame, 8 x 4, 144 spindles
8—Whitin frames, 8 x 4

Winders

4—Universal #90
2—Foster #12
3—Abbot winders

Warpers

2—Saco Lowell high speed 54" drums, 600 yds. per minute

Picking

1—Kitson 2 beater 40" single process picker
1—Saco Lowell 45" 2 beater single process picker

Looms

170—C&K 56½" King Cotton
24—Draper 69½" Modified D
180—Draper 60" Model E
340—Draper 55½" Model K
69—Draper 40" Model XP

MODERN RAYON FINISHING MILL

Latest type dyeing and finishing mill capable of producing 700 pieces in 2, 8 hour shifts. Jigg and Box dyeing. Modern Henniken equipment, tenter frames, boil-off machine, loop dryer jiggs, all accessory equipment.

FINISHING EQUIPMENT

1—Winsor & Jerauld 40' tenter frame
1—Butterworth 30', 60" width tenter frame.
1—Set vertical dry cans, 40 cans 23' diameter, 105" width.
1—Set 18 tinned iron dry cans, 140" width, 23# diameter
1—Van Vlaanderen 3 roll quetsch, all rubber rolls, 50" width.
5—Textile Mixing Kettles, 100 to 200 gallons, Agitators.
1—7 bowl hydraulic calender, 80" width.
1—Butterworth 3 roll calender 50"
2—Van Vlaanderen Button Breakers, 19 and 35 roll, 50" width.
18—John Hope Pantograph Machines, 45" to 50" reconditioned.
4—Tubbers, 50" and 60".
2—Beamers, 60" and 72".
3—Woonsocket Nappers, 24 roll 86", double acting.

REFINANCING • APPRAISALS • PURCHASE • SALE • LIQUIDATION OF MILL PROPERTIES

REPUBLIC TEXTILE EQUIPMENT COMPANY

40 WORTH STREET — ***Phone COrtland 7-1591*** — **NEW YORK CITY**

Purchase and Sale of Used Machinery

16,000 Brand New Govt. Surplus

HAND TRUCKS

★ For Handling Barrels, Boxes, Bales etc.
★ Steel Cross Bars firmly fastened to Wood frame.
★ Heavy Duty Construction—Iron Wheels.

$35 Value at Only $9.95 Ea.
Choice of Either Style

F.O.B., Cin., O.
*Substantial Discount on Carload Purchase. Terms: Rated Concerns Net—Ten Days —Others Kindly Send Check With Order. Include Sales Tax in Ohio.

"Western" Style. Plain Bearings. 115 lbs. Approx. 60" High x 24"

"Stevedore" Style. Roller Bearings. 150 lbs. Approx. 60" High x 27"

AMERICAN SALES CO.
1562 Harrison Ave. Cincinnati 14, Ohio
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EGAN BUYS AND SELLS ANYWHERE AND EVERYWHERE!

FOR IMMEDIATE DELIVERY

1—DAVIS & FURBER FEARNAUGHT MIXING PICKER; All-iron construction; cylinder 48" x 48"; 4 workers and 4 strippers; table feed; immediate delivery.

MACHINE LOCATED WEST COAST

GEORGE W. EGAN
WOONSOCKET, RHODE ISLAND
— U. S. A. —

"THE MACHINERY MAN KNOWN EVERYWHERE"

FOR SALE

1—48" Hercules Rubber Covered Basket Haring & Stephens Extractor

1—Two Bowl Scouring Machine

MORGAN DYEING & BLEACHING CO.
Rochelle, Illinois

WE BUY!
WE SELL!
TEXTILE EQUIPMENT

FOR SALE

4 SAMPLE CARDS—Proctor & Swartz make. 30" main cylinder. 11" width, cast iron. *Rebuilt and in excellent condition. Inspection invited at our warehouse.*

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Warehouse: 80 Fountain St., P. O. Box 104, Pawtucket, R. I.

USED TEXTILE MACHINERY

AND

MILL SUPPLIES

Representing Comer Machinery Co. exclusively throughout Central and South America, Cuba, Costa Rica and Jamaica

NEW ORLEANS MACHINERY CO.

CABLE ADDRESS "NOMACO"

The services of our Engineers available at all times

642 AUDUBON BUILDING — **NEW ORLEANS 16, LA. U.S.A.**

L. J. McCAFFREY & SON, INC.

FOR SALE

1500—8" x 4" Conc. Reducer Spools.
140—10" x 6" Drawing Spools.
4—Complete Spinning Frame Change-Overs, including Rabbeth Spindles, Rings, Ring & Bolster Rails, Separators & Top Boards.

WORSTED CAPS

2420—Bell—5¾" o.a. x 1-5/16".
4034—Bell—7¾" o.a. x 1-9/16".
1100—Conical—6-1/16" o.a. x 1-7/16".
1798—Conical—6-5/8" o.a. x 1-3/8".
1891—Conical—6-15/16" o.a. x 1-3/8".
1500—Conical—7" o.a. x 1-3/8".
1500—Conical—7" o.a. x 1-11/16".
2428—Conical—7-1/8" o.a. x 2-15/16".
1195—Straight—6-3/8" o.a. x 2-3/8".
3222—Straight—6-7/8" o.a. x 2-1/16".

SPINDLES

718—Spindles—19" o.a. x 15½" Blade.
2198—Spindles—20½" o.a. x 17" Blade.

TUBES

4235—Tubes—5½" x 1" Whorl—7/16" I.d.
2113—Tubes—7⅝" x 1" Whorl—7/16" I.d.

SPINNING RINGS & HOLDERS

600—2⅛"—#2 Rail Set Flange Rings.
550—2½"—Vertical Rings.
2907—3"—Vertical Twister Rings.
500—2-9/16"—#2 Rev. Rings—with Plate Holders.
2500—2-3/4"—C.I. Holders for 2½" Vertical Rings.

P. O. BOX 495 — PAWTUCKET, R. I.

For Sale for Immediate Delivery

50	24	Carrier	Braiders	Single	Deck
1	20	"	"	"	"
1	28	"	"	"	"
6	32	"	"	"	"

Complete with cast iron tube holders and steel braider benches with group drives for above. All made by Textile Machine Works, brand new, unused.

FS-200, Textile World 330 West 42nd St., New York 18, N. Y.

TAP LOOM

FOR SALE

One 27 inch Tap Loom for making wool carpets and rugs, collins make, 3 harness, wire motion. Excellent condition.

L. B. FARR CO.
620 N. Main Ave., Scranton, Pa.

WORSTED YARNS

Available — ***Spot Delivery***

2/20 Natural Skeins—50—56's, 56's.
2/40 Dyed Cones, Also Natural.
1/20 Dyed Cones. Sacrifice Price.

FS-230, Textile World
330 West 42nd St., New York 18, N. Y.

FOR SALE

NAPPING MACHINE

Curtis & Marble 120" double cylinder carpet napping machine with double cutter carpet shear, steam box, polishing rolls, brushing rolls, blower system and driver."

FS-228, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED TO BUY

Two Steam Jacketed or Copper Stainless Steel Color Kettles Fifty Gallons Each and One 25/30 Gls.

W-206, Textile World
330 West 42nd St., New York 18, N. Y.

FOR SALE

RUNNING PLANT

CONSISTING OF

36 Draper automatic looms, equipped with individual motor drives and electric warp stop motions. Also accessory machinery.

FS-214, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

WANTED
BOX LOOMS

4x4 Crompton & Knowles box looms, motor driven, 56 or 60" reed space, 25 harness dobby, double index with multiplier, in A-1 condition. Address

W-199, Textile World,
330 West 42 St., New York 18.

WANTED
20 C&K WOOLEN LOOMS

Reed space: 72" to 76"
Shuttles containing 8"x1¼" bobbins
Reply

W-197, Textile World
330 W. 42nd St., N. Y. 18, N. Y.

RASCHEL MACHINES

Wanted Immediately

New or used, in perfect running condition. State price and gauge.

W-212, Textile World
330 West 42nd St., New York 18, N. Y.

BRAID PLANT

For Sale

All set and ready to run on elastic braid. German textile machines consisting of 2-3-4 ligne and soutache all complete including winders, spoolers, etc. Will sell all or part.

FS-231, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

Printing Machine

Textile Roller for good 42" or over. Not less than 3 colors. Must be in good working condition. Also piece goods dryer and steamer.

W-163, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

HUSSONG SKEIN DYEING MACHINES

Monel Metal or Stainless Steel
Capacity - 200-lb and 300-lb

W-209, Textile World
330 West 42nd St., New York 18, N. Y.

Crescent

THE NAME THAT LOOMS BIG TO EXPERIENCED TEXTILE MEN WHO WANT TO BUY OR SELL DEPENDABLE EQUIPMENT

Crescent Leadership is based on the service we give . . . on single units or complete plants.

JUST A PARTIAL LIST OF OUR VALUES:

OPENING AND PICKING

3—Howard & Bullough Bale Breakers with 6-foot blending aprons
1—Whitin Bale Breaker with 6-foot blending apron
1—Woonsocket Bale Breaker, double hopper
10—Vertical Openers, Whitin, Saco-Lowell, H & B, Woonsocket
15—Automatic Hopper Feeders, Whitin, H & B, Kitson, Harwood
1—Whitin 2-section Single Process Picker, 1923 Model
2—H & B 40" Finisher Pickers, 2-blade beaters, extended aprons

CARDS AND COMBERS

50—Lowell 40" Flat Top Cards, 28" doffers, 12" coilers, belt driven
6—Nasmith Hetherington Combers, 10" coilers
24—Whitin Model D-2 Combers, 12" coilers
10—Whitin Ribbon Lap Machines
10—Whitin Silver Lap Machines

DRAWING

21—Deliveries Whitin Model H Drawing, 4—Frames of 5 deliveries, 15/16" bottom steel rolls, 1 Frame of 4 deliveries, metallic top rolls, 1¼" front bottom rolls.
24—Deliveries Woonsocket Drawing, 4 deliveries per frame, 10" coilers, 1⅜" bottom front rolls
16—Deliveries Woonsocket Drawing, 4 deliveries per frame, metallic rolls, 12" coilers
136—Deliveries Lowell Drawing, 5 and 6 deliveries per frame, 10" and 12" coilers, 1⅜" bottom front rolls

ROVING

2—Whitin 12x6 Slubbers, 76 spindles each
3—Woonsocket 12x6 Slubbers, 1—48 spindles, 2—84 spindles
2—H & B 12x6 Slubbers, 64 spindles, shell front rolls
20—Woonsocket and Lowell 11x5½ Slubbers, 60 spindles, 9" and 9½" gauge
2—Whitin 11x5½ Slubbers, 80 spindles, 9" gauge
2—Woonsocket 9x4½ Slubbers, 144 spindles, shell front rolls
1—Whitin 9x4½ Slubber, 108 spindles
2—H & B 9x4½ Intermediates, 112 spindles, shell front rolls, 1927 Model
4—Lowell 9x4½ Intermediates, 92 spindles
22—Woonsocket and Saco-Lowell 8x4 Speeders, 136 spindles, 6" gauge
38—Whitin and Saco-Lowell 7x3½ Speeders, 156 and 144 spindles, 5¼" gauge

SPINNING

10—Whitin tape drive Spinning Frames, 256 spindles, 3" gauge, 8—1 5/16" ring, 2—1¾" ring
5—Whitin band drive Spinning Frames, 252 spindles, 3" gauge, 1 3/16" ring
65—H & B band drive Spinning Frames, 10—176 spindles, 20—192 spindles, 35—256 spindles, 2½" gauge, 1 5/16" ring
38—Fales & Jenks tape drive Spinning Frames, 3¼" gauge, 2¼" ring, 240 spindles each, Roth long draft

TWISTING

17—Saco-Lowell Tape Drive Twisters, 132 spindles, 7" gauge, 5½" ring, motor driven, 1944 Model
8—Saco-Lowell Tape Drive Twisters, 120 spindles, 5½" gauge, 4½" ring, motor driven, 1920 Model
11—Collins Brothers Tape Drive Twisters, 152 spindles, 4½" gauge, 3½" ring, motor driven, 1921 Model
3—Saco-Lowell Jack Twisters, 3" gauge, 1⅝" ring, Tape Drive using 50" Jack Spools, 18 ends per spool, motor driven, 1924-38 Models

WINDING, WARPING, SPOOLING AND SLASHING

38—#90 Universal Winders, equipped for Rayon with disc quill tensions.
5—#50 Universal Winders, for cones or tubes, 6 spindles each, belt driven
7—Foster #12 Cone Winders, Semi-Hi speed, 100 spindles each
3—Foster #25 Doublers, Multiple Wind, motor driven
2—Foster #30 Cone Winders, 100 spindles each, motor driven by 5 HP, 550 volt motors
1—Universal #40 Wood Cone Winder, 70 spindles, Double motor, 550 volt, 1932 Model, with Wood Cones
3—Barber-Colman High Speed Warpers with Creels
2—Entwistle 54" High Speed Warpers with Creels for Wood Cones
12—Saco-Lowell, Whitin and Draper Tape Drive Spoolers, up to 100 spindles each
1—Saco-Lowell Slasher, 7' and 5' cylinders, for 52" beams, complete with size box, positive driven

LOOMS

162—Draper Model "E" Rayon Looms, 45½" reed space, Lacey tops, Stafford thread cutters, sliding bar stop motions, motor driven by ½ HP, 550 volt motors, 1927 Model
324—Draper Model "K" Rayon Looms, 45½" reed space, Stafford thread cutters, with or Without Dobbies, motor or belt driven
60—Draper Model "E" Looms, 45½" reed space, Stafford thread cutters, operating from C&K 600 hook Jacquard Heads
140—Draper Model "E" Rayon Looms, 45½" reed space, Stafford thread cutters, with or without dobbies, motor or belt driven
80—Draper Model "E" Rayon Looms, 49" reed space, Stafford thread cutters, sliding bar stop motion, 27 with dobbies, balance roller tops, belt driven, 1927 Model
86—Draper Modified "D" Looms, 49" reed space, 42 with dobbies, 44 cam looms with Dwight tops, belt driven
130—Draper Model "D" Looms, 71" reed space, with C&K Intermediate Worsted Heads, Stafford thread cutters, motor driven by ¾ HP, 550 volt motors
4—C & K 48" 4x4 box Looms, with Gem Intermediate Heads, motor driven
68—C & K 53½" reed space Looms, 4x1 box, 20-harness double index dobbies
20—Stafford Draper Automatic Looms, 76" reed space, Gem Heads, 2x1 box mixing motion, C&K electric feelers, electric stop motions, 22" dia. beam, motor driven by 1 HP, 550 volt motors
36—Stafford 100" reed space Looms, automatic shuttle change, motor driven

FINISHING

152—Copper Dry Cans, 23" diameter x 50" face, Vertical Frames, Removable Journals, Siphons and Buckets
1—19-Can Butterworth Dryer, equipped with new 16 gauge Stainless Steel Cans 23" diameter x 130" face, with self-aligning roller bearings, siphons, individual traps, Johnson joints and strainers, vertical frames, 1942 Model
1—24-Can Butterworth Dryer, 23" diameter x 72" face cans, equipped same as above
1—Set 22 Cans, Tinned Copper, 23" diameter x 66" face, Horizontal Frames
1—72" Textile 40 Can Dryer, Copper Cans, 23" diameter x 72" face, Horizontal Frames
1—86" 37 Can Dryer, Copper Cans, 30" diameter x 86" face, Horizontal Frames
1—90" 11 Can Dryer, Copper Cans, 60" diameter x 90" face, Horizontal Frames
1—99" 23 Can Dryer, Copper Cans, 23" diameter x 99" face, Horizontal Frames
2—46" Cloth Agers, 24' long
2—72" Cloth Agers, 12' long.
1—72" Shallow Open Soaper, or Washer, 8 Compartments, with 8 2-roll Nip Units
1—43" 2-roll Mangle, S & L set, 1 rubber covered roll, 1 copper roll, belt driven
1—58" 6-burner open flame type Singer, with totally enclosed quench box

MISCELLANEOUS

1—Sargent Raw Stock Wool Dryer, Model M, 97" wide, 24' long, Wire Screen Mesh Apron, equipped with 4 Fans, belt driven
1—Whitin Model "A" 3-cylinder Hard Waste Machine, 1927 Model
2—48" Tolhurst Extractors, Copper Basket, Overhead Belt Drive
3—Davis & Furber Dressing Reels, 82" wide, equipped with creels and dressing frames.
1—Hermas 4-Blade Shear, 1936 Model with Curtis & Marble Brusher, for 48" Cloth, Motor Driven
1—Termaco #207 Roving Bobbin Cleaner, will take up to 12" bobbin, belt driven
1—Saco-Lowell Card Stripper connected to Sturtevant #7 Blower, motor driven
2—Davis & Furber Mules, 2.08 gauge, one 350 spindles, one 355 spindles, accelerated spindles, 1916 Model
8—Davis & Furber Mules, 2" gauge, one 264 spindles, three 288 spindles, four 312 spindles, accelerated spindles, belt driven
3—66" Parks & Woolson 3-Blade Shears
1—66" David Gessner Steam Cloth Press, Double Bed, Model 1933
1—66" Curtis & Marble Cloth Yardage Folder, 1 yard fold, foot lift, belt driven.

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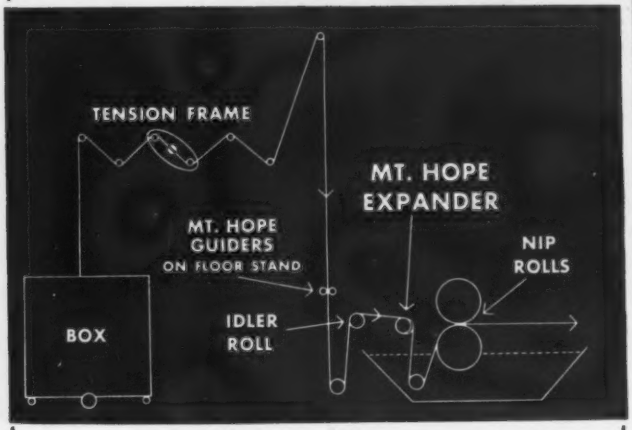

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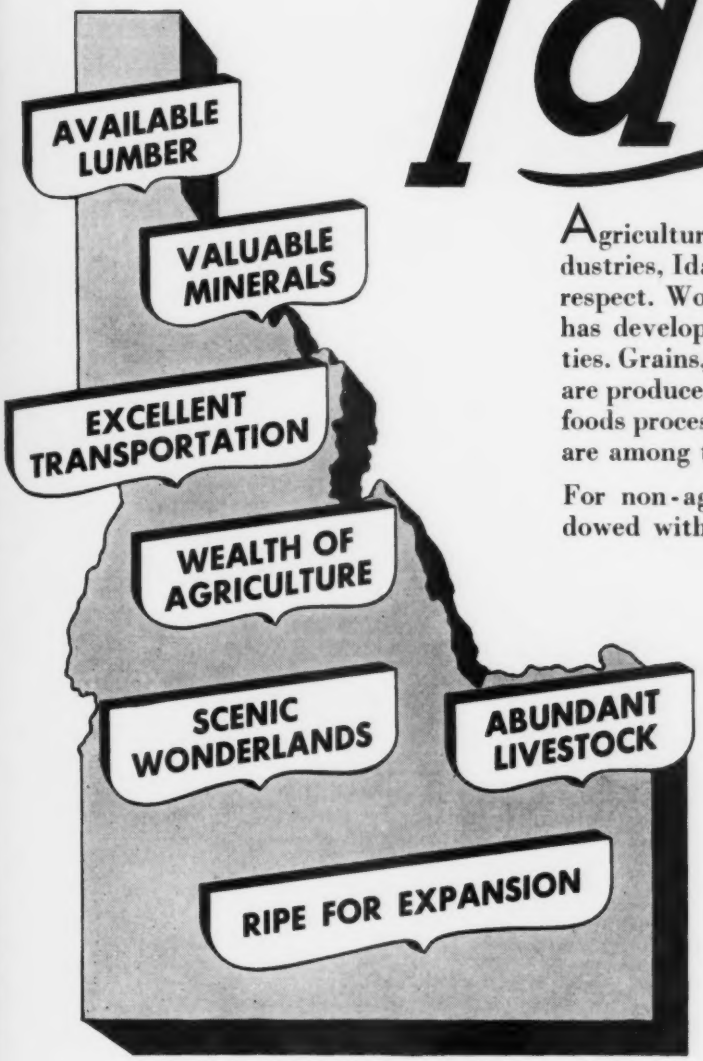
Idaho*



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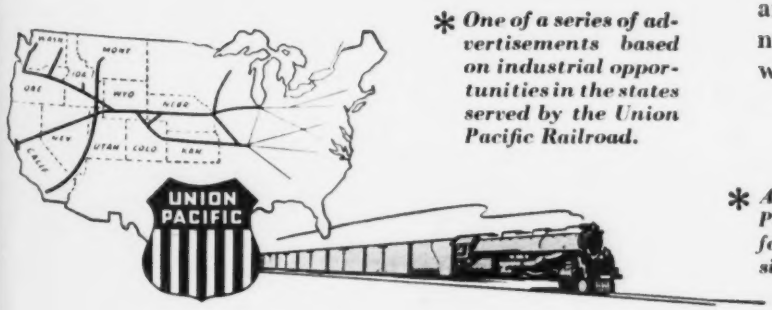

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